

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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))	
)	March 22, 2013

**ENTERGY'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR
CONTENTION CW-EC-3A (ENVIRONMENTAL JUSTICE)**

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Pursuant to 10 C.F.R. § 2.1209, and the Atomic Safety and Licensing Board’s (“Board”) February 28, 2013 Order,¹ Entergy Nuclear Operations, Inc. (“Entergy”) submits its Proposed Findings of Fact and Conclusions of Law (“Proposed Findings and Conclusions”) on Hudson River Sloop Clearwater, Inc. (“Clearwater”) Contention EC-3A (“CW-EC-3A”).

The Proposed Findings and Conclusions are based on the evidentiary record in this proceeding, and are submitted in the form of a proposed Partial Initial Decision by the Board. The Proposed Findings and Conclusions are set out in numbered paragraphs, with corresponding citations to the record of this proceeding.

I. INTRODUCTION

1. This Partial Initial Decision presents the Board’s Findings of Fact and Conclusions of Law on Contention CW-EC-3A. CW-EC-3A raises a National Environmental Policy Act (“NEPA”)² challenge to whether the U.S. Nuclear Regulatory Commission (“NRC”

¹ Licensing Board Order (Granting Parties Joint Motion for Alteration of Filing Schedule) at 1 (Feb. 28, 2013) (unpublished).

² 42 U.S.C. § 4321 *et seq.* (2006).

or “Commission”) Staff’s Final Supplemental Environmental Impact Statement (“FSEIS”)³ adequately examines and discloses the potential that a severe accident at Indian Point Energy Center (“Indian Point”) would cause disproportionately significant and adverse radiological impacts to minority and low-income (*i.e.*, environmental justice) populations in the surrounding region.⁴ According to Clearwater, the FSEIS fails to appropriately: (1) identify potentially-affected environmental justice populations; (2) analyze Indian Point emergency plans, which, according to Clearwater, show the potential for disproportionate impacts to minority and low-income populations (including prisoners, immobile hospital patients, transportation-dependent individuals, nursing-home residents, Hispanic populations, and pre-school children) in the event of a severe accident; and (3) consider emergency planning improvements as mitigation to allegedly reduce those disproportionate impacts.

2. Having considered all of the record evidence, the Board finds that Clearwater’s criticisms of the NRC Staff’s FSEIS analysis lack merit and, in any event, do not credibly undermine the conclusion that environmental justice populations would not suffer disproportionately significant and adverse impacts from a hypothetical Indian Point severe accident. As an initial matter, we find that, consistent with Commission policy and NRC Staff guidance, the FSEIS reasonably and appropriately identifies and accounts for all environmental justice populations using U.S. Census Bureau Block Group data.⁵ Using these data complies

³ NUREG-1437, Supp. 38, Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Indian Point Nuclear Generating Units Nos. 2 and 3, Final Report (Dec. 2010) (“FSEIS”) (NYS00133A-J).

⁴ Consistent with Commission precedent, the Board focuses its Decision on the FSEIS even though Clearwater’s predecessor contention, CW-EC-3, challenged Entergy’s Environmental Report (“ER”). *See La. Energy Servs., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 84 (1998) (indicating that the Board appropriately treated a NEPA contention as a challenge to the FEIS even though most of the environmental contentions were filed as challenges to the applicant’s ER).

⁵ *See* Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, 69 Fed. Reg. 52,040, 52,046 (Aug. 24, 2004) (“NRC Environmental Justice Policy Statement”)

with NEPA's "hard look" requirement because these data specifically include information about all populations (including the populations inside correctional facilities and other institutions).

3. In addition, we find that the FSEIS reasonably adopts the Generic Environmental Impact Statement ("GEIS") finding that severe accident risks are SMALL for all populations, including environmental justice populations.⁶ Clearwater's asserted disproportionate impact claim is contrary to NRC regulations and to the GEIS conclusion that for all plants, the probability-weighted consequences of severe accidents are SMALL.⁷ Moreover, even if Clearwater were permitted to challenge the generic conclusion that severe accident risks are SMALL, Clearwater has not presented sufficient evidence to cast doubt on that conclusion as it relates to environmental justice populations relevant to Indian Point.

4. Rather than providing a critique within the bounds of NEPA and NRC regulations, the vast majority of Clearwater's testimony directly challenged Indian Point emergency and evacuation plans, and those of the surrounding government jurisdictions, and thus is outside the scope of CW-EC-3A and this proceeding. Nevertheless, we find that Indian Point, state, and local emergency plans have been demonstrated to provide reasonable assurance that appropriate protective measures would be taken for all members of the public in the event of a severe accident, including environmental justice populations. This finding is not subject to review in this proceeding, although even if it were, the evidence in this proceeding provided no substantial basis to conclude emergency plans would not work as described, and the evidence

(ENT000260); LIC-203, Rev. 2, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues, App. C, at C-5 to C-6 (Feb. 17, 2009) ("LIC-203, Rev. 2") (ENT000264).

⁶ See NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants at 5-115 (May 1996) ("GEIS") (NYS00131C).

⁷ 10 C.F.R. Pt. 51, Sup. A, App. B, Tbl. B-1; GEIS at 5-115 (NYS00131C). "SMALL" is defined in NRC regulations as environmental impacts that "are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource." 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1 § 3.

further demonstrates that these plans specifically consider special facility residents (*e.g.*, prisons, nursing homes, hospitals, schools), and transit-dependent and Spanish-speaking populations for purposes of accommodating any unique protective action needs.

5. Finally, we conclude that the FSEIS need not consider emergency planning improvements as “mitigation” because the record in this proceeding shows that a severe accident at Indian Point would result in SMALL probability-weighted impacts to minority and low-income populations, and, in any event, existing emergency plans already provide reasonable assurance that appropriate protective measures would be taken for all members of the public in the event of a severe accident.

6. For the reasons fully set forth below, the Board finds that, based on the entire record of this proceeding, the NRC Staff and Entergy carried their respective burdens of proof on this contention, and that the NRC Staff satisfied its obligations under NEPA and 10 C.F.R. Part 51. The Board thus resolves CW-EC-3A on the merits in favor of the NRC Staff and Entergy. In accordance with well-established NRC adjudicatory practice, the NRC Staff’s FSEIS is deemed supplemented by this Decision.⁸

⁸ *Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station)*, CLI-12-01, 75 NRC ___, slip op. at 30 (Feb. 9, 2012) (citation omitted) (“In an NRC adjudicatory proceeding, the adjudicatory record, Board decision, and any Commission decision become effectively part of the environmental review document (here, a final supplemental EIS). Therefore, the SEIS is deemed supplemented by the Board’s decision, and by this decision.”).

II. PROCEDURAL HISTORY OF CONTENTION CW-EC-3A

A. Application Submittal and Original Contention CW-EC-3

7. On April 23, 2007, Entergy applied to the NRC to renew the Indian Point Unit 2 and Unit 3 (“IP2” and “IP3”) operating licenses for twenty years beyond their current expiration dates of September 28, 2013, and December 12, 2015, respectively.⁹

8. In accordance with NRC Regulatory Guide 4.2, Supp. 1 (ER guidance for license renewal applicants),¹⁰ Section of 2.6.2 of Entergy’s Environmental ER used U.S. Census Bureau Block Group data to identify and disclose minority and low-income populations within a 50-mile radius of Indian Point.¹¹ In addition, in accordance with Regulatory Guide 4.2, Supp. 1, ER Section 4.22 evaluated the potential for environmental impacts to these environmental justice populations, and concluded that no disproportionately significant and adverse impacts on minority and low-income (*i.e.*, environmental justice) populations would result from renewal of the IP2 and IP3 operating licenses.¹²

⁹ Entergy Nuclear Operations, Inc., Indian Point Nuclear Generating Unit Nos. 2 and 3; Notice of Acceptance for Docketing of the Application and Notice of Opportunity for Hearing Regarding Renewal of Facility Operating License Nos. DPR-26 and DPR-64 for an Additional 20-Year Period, 72 Fed. Reg. 42,134 (Aug. 1, 2007) (“Hearing Notice”).

¹⁰ See Regulatory Guide 4.2, Supp. 1, Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses at 4.2-S-51 to -52 (Sept. 2000) (“Regulatory Guide 4.2, Supp. 1”) (ENT000136); see also Executive Order 12898 of February 11, 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629, 7631-33 (Feb. 16, 1994) (“Executive Order 12898”) (ENT000259); NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (ENT000260); LIC-203, Rev. 1, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues (May 24, 2004) (“LIC-203, Rev. 1”) (ENT000261). We note that in preparing its ER, Entergy followed the guidance in LIC-203, Rev. 1 (ENT000261). Subsequently, the NRC Staff issued LIC-203, Rev. 2 (ENT000264). Because the environmental justice guidance in these two documents is consistent, we generally focus on the more recent document, LIC-203, Rev. 2 (ENT000264).

¹¹ See Indian Point Energy Center License Renewal Application, App, E, Applicant’s Environmental Report, Operating License Renewal Stage, Indian Point Energy Center § 2.6.2 (Minority and Low-Income Populations) (“ER”) (ENT00015B).

¹² See *id.* § 4.22 (Environmental Justice) (ENT00015B).

9. On August 1, 2007, the NRC published in the *Federal Register* a “Notice of Acceptance for Docketing of the Application and Notice of Opportunity for Hearing.”¹³ The Hearing Notice explicitly stated that proposed contentions “shall be limited to matters within the scope of [license renewal].”¹⁴ The Hearing Notice also provided that any person wishing to participate as a party must file a petition for leave to intervene within 60 days of the Notice (*i.e.*, October 1, 2007),¹⁵ a deadline later extended until November 30, 2007.¹⁶ The Board subsequently granted Clearwater’s request¹⁷ to extend that deadline until December 10, 2007.¹⁸

10. Clearwater submitted Contention CW-EC-3 in its December 10, 2007 Petition to Intervene.¹⁹ As originally proffered, CW-EC-3 alleged that Entergy’s ER “[c]ontains a [s]eriously [f]lawed [e]nvironmental [j]ustice [a]nalysis that does not [a]dequately [a]ssess the impacts of Indian Point on the [m]inority, [l]ow-income and [d]isabled [p]opulations in the [a]rea [s]urrounding Indian Point.”²⁰

11. In CW-EC-3, Clearwater raised two overarching concerns. First, Clearwater claimed that Entergy’s environmental justice methodology had two flaws: (1) Entergy did not present raw data for the total minority and low-income populations; and (2) Entergy used census

¹³ Hearing Notice, 72 Fed. Reg. at 42,134.

¹⁴ *Id.* at 42,135.

¹⁵ *Id.* at 42,134.

¹⁶ Entergy Nuclear Operations, Inc., Indian Point Nuclear Generating Unit Nos. 2 and 3; Notice of Opportunity for Hearing Regarding Renewal of Facility Operating Licenses Nos. DPR-26 and DPR-64 for an Additional 20-Year Period: Extension of Time for Filing of Requests for Hearing or Petitions for Leave To Intervene in the License Renewal Proceeding, 72 Fed. Reg. 55,834 (Oct. 1, 2007).

¹⁷ Request for Extension to File Formal Request for Hearing and Petitions to Intervene with Contentions (Nov. 23, 2007), *available at* ADAMS Accession No. ML073380114.

¹⁸ Licensing Board Order (Granting an Extension of Time to Clearwater Within Which to File Requests for Hearing) at 2 (Nov. 27, 2007) (unpublished).

¹⁹ Hudson River Sloop Clearwater, Inc’s Petition to Intervene and Request for Hearing at 31-55 (Dec. 10, 2007) (“Clearwater Petition”), *available at* ADAMS Accession No. ML073520042.

²⁰ *Id.* at 31.

Block Group data, rather than lower-level census Block data, to identify minority and low-income populations.²¹

12. Second, Clearwater asserted that Entergy failed to account for four purported disproportionate impacts in the ER, claiming that: (1) minority communities suffer disparate impacts from Indian Point's radionuclide emissions, which allegedly cause cancer rates in the area surrounding Indian Point to exceed the national average;²² (2) low-income populations that engage in subsistence fishing in the lower Hudson Valley region would ingest radionuclides and other toxic substances from Indian Point;²³ (3) due to evacuation challenges, a "significant accident" would disproportionately harm minority and low-income populations confined to prisons, hospitals, and other nearby institutions;²⁴ and (4) the production, use, and storage of Indian Point nuclear fuel would disproportionately impact Native American populations.²⁵ Clearwater also stated that New York State ("New York") Contention 29, which challenged Indian Point emergency plans, provided additional support for CW-EC-3.²⁶

13. Entergy opposed CW-EC-3's admission, arguing that it addressed issues that are outside the scope of license renewal, including emergency planning and issues the NRC's GEIS addresses generically.²⁷ Entergy also claimed that Clearwater failed to provide evidence of any

²¹ *Id.* at 36-37. The U.S. Census Bureau organizes its data in a geographic hierarchy wherein Blocks are the smallest geographical unit. Testimony of Entergy Witnesses Donald P. Cleary, Jerry L. Riggs, and Michael J. Slobodien regarding contention CW-EC-3A (Environmental Justice) at 22 (Mar. 29, 2012) ("Entergy Testimony") (ENT000258). Several Blocks are combined to make a Block Group, several Block Groups are combined to make up a Tract, and several Tracts are combined to make up a county. *Id.* at 22-23.

²² Clearwater Petition at 41-42.

²³ *Id.* at 42-47.

²⁴ *Id.* at 47-53.

²⁵ *Id.* at 53-55.

²⁶ *Id.* at 48.

²⁷ Answer of Entergy Nuclear Operations, Inc. Opposing Hudson River Sloop Clearwater Inc's Petition to Intervene and Request for Hearing at 61 (Jan. 22, 2008), *available at* ADAMS Accession No. ML080300053.

significant and disproportionate adverse impact on environmental justice populations,²⁸ and further, that Clearwater incorrectly included, in its definition of environmental justice populations, a variety of non-environmental justice groups, such as prisoners, children, students, hospital patients, and the elderly.²⁹

14. The NRC Staff also opposed CW-EC-3's admission. Like Entergy, the NRC Staff argued that CW-EC-3 raised issues outside the scope of license renewal, specifically, emergency planning and issues the GEIS generically addresses.³⁰ The NRC Staff further contended that Clearwater failed to identify or allege any significant impact on an environmental justice population.³¹ Finally, the NRC Staff argued that Clearwater failed to provide factual information or expert opinion to rebut Entergy's demographic methodology or analysis.³²

15. In its reply to Entergy's and the NRC Staff's Answers, Clearwater argued that, because the GEIS does not analyze environmental justice issues, those issues are site-specific and must be considered in this license renewal proceeding.³³ Clearwater also argued that the license renewal proceeding must address evacuation plans because those plans purportedly do not account for environmental justice issues.³⁴ Regarding Entergy's and the NRC Staff's claims

²⁸ *Id.* at 66-67.

²⁹ *Id.* at 64.

³⁰ NRC Staff's Response to Petitions for Leave to Intervene Filed by (1) Connecticut Attorney General Richard Blumenthal, (2) Connecticut Residents Opposed to Relicensing of Indian Point, and Nancy Burton, (3) Hudson River Sloop Clearwater, Inc., (4) The State of New York, (5) Riverkeeper, Inc., (6) The Town of Cortlandt, and (7) Westchester County at 98-99 (Jan. 22, 2008), *available at* ADAMS Accession No. ML080230543.

³¹ *Id.* at 99.

³² *Id.* at 98.

³³ Hudson River Sloop Clearwater Inc's Reply to Entergy and the Nuclear Regulatory Commission (NRC) Responses to Clearwater Petition to Intervene and Request for Hearing at 6 (Feb. 8, 2008).

³⁴ *Id.* Specifically, Clearwater argued that the license renewal proceeding must address evacuation plans because the plans otherwise "never will be [reviewed]." *Id.*

that it had provided insufficient factual support for its claims, Clearwater simply asserted that it “demonstrated disproportionate impacts” to the extent required by NRC regulations.³⁵

16. The Board held an oral argument on whether CW-EC-3 met the Commission’s contention admissibility requirements.³⁶ At the oral argument, Clearwater asserted that if there is “a need to do an evacuation at the plant or even a perceived need, then there’s going to be a huge disparate impact upon the prison and the hospital populations.”³⁷ Clearwater also stated that it wished to litigate whether minority and low-income populations without cars would be evacuated in the event of an accident at Indian Point.³⁸

17. The Board admitted CW-EC-3, in part.³⁹ In ruling on the admissibility of CW-EC-3, the Board rejected three of Clearwater’s four claims, involving cancer rates, subsistence fishing allegations, and Native American populations.⁴⁰ We admitted CW-EC-3 only with respect to Clearwater’s claim that the ER’s environmental justice evaluation failed to address potential disparate severe accident impacts on minority and low-income populations.⁴¹ More specifically, in admitting this part of the contention, we indicated that Clearwater alleged that the ER was deficient because it did not address the impact that an Indian Point severe accident would have on environmental justice populations in “Sing Sing, a maximum security correctional facility located less than 10 miles from Indian Point that houses more than 1,750

³⁵ *Id.* at 7.

³⁶ Official Transcript of Proceedings, Indian Point Nuclear Generating Units 2 & 3 at 687:18-705:15 (Mar. 12, 2008) (“Mar. 12, 2008 Tr.”).

³⁷ *Id.* at 692:8-11 (Filler).

³⁸ *Id.* at 703:4-18 (Filler).

³⁹ *See Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 & 3), LBP-08-13, 68 NRC 43, 200-01 (2008).

⁴⁰ *See id.* at 201-03 (admitting only Clearwater’s claim involving potential disparate severe accident impacts on environmental justice populations, and noting that Clearwater failed to adequately support its other claims).

⁴¹ *Id.* at 201.

predominately minority inmates,” and in “twenty-five other prisons and jails located within 50 miles of Indian Point.”⁴²

18. Regarding Entergy’s and NRC Staff’s argument that the contention raised emergency planning issues outside the scope of a license renewal proceeding, we ruled as follows:

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.”⁴³

19. Notably, for purposes of understanding the scope of this contention, we rejected several other contentions challenging emergency preparedness and evacuation planning (including New York State Contention 29, which Clearwater indicated provided additional support for CW-EC-3).⁴⁴ In rejecting those contentions, we explained that 10 C.F.R. § 50.47(a)(1)(i) “places consideration of emergency plans outside the scope of this proceeding and is supported by NRC case law.”⁴⁵ As noted below, the Board is bound by that regulation as it relates to this contention.

⁴² *Id.* at 200 (citations omitted).

⁴³ *Id.* at 201 (citation omitted). The Commission has since held that a NEPA-based contention may not be used to challenge the adequacy of emergency planning in a license renewal proceeding. *See Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 302 (2010) (ruling that witness statements on “the issue of emergency planning—the need to provide accurate, ‘real time’ projections of the location and duration of potential public exposures to determine whether, when, and where particular population groups may need to be evacuated” are beyond the scope of a license renewal severe accident mitigation alternative review—a NEPA-based review).

⁴⁴ Clearwater Petition at 48. *See supra* ¶ 12.

⁴⁵ *Indian Point*, LBP-08-13, 68 NRC at 149; *see also id.* at 164-66.

B. NRC Staff's Initial Environmental Review and DSEIS Environmental Justice Evaluation

20. As required by NEPA and 10 C.F.R. Part 51, the NRC Staff comprehensively reviewed Entergy's license renewal application. The NRC Staff initiated that process by publishing a notice of intent to prepare a plant-specific supplement to the GEIS (*i.e.*, a supplemental environmental impact statement, or "SEIS") and to conduct related environmental scoping activities.⁴⁶

21. As part of that process, the NRC Staff conducted environmental site audits at Indian Point from September 10-14, 2007, and from September 24-27, 2007, which allowed the NRC Staff to tour the site, examine the data Entergy used in preparing the ER, and meet with Entergy personnel and representatives from federal, state, and local government agencies to obtain relevant information.⁴⁷

22. In preparing the IP2 and IP3 Draft Supplemental Environmental Impact Statement ("DSEIS"), the Staff reviewed the Indian Point ER and compared it to the GEIS; consulted with numerous federal, state, regional, and local agencies, and Native American Tribes (as listed in Appendix D to the DSEIS); conducted an independent review of issues in accordance with NUREG-1555, Supp. 1 (the Staff's Environmental Standard Review Plan for license renewal applications),⁴⁸ and considered the hundreds of public comments received during the scoping

⁴⁶ Entergy Nuclear Operations, Inc., Indian Point Nuclear Generating Unit Nos 2 and 3; Notice of Intent to Prepare an Environmental Impact Statement and Conduct Scoping Process, 72 Fed. Reg. 45,075 (Aug. 10, 2007). 10 C.F.R. § 51.20(b)(2) requires the NRC to prepare an EIS or SEIS for renewal of a reactor operating license. In addition, Section 51.95(c) states that the EIS prepared at the operating license renewal stage will be a supplement to the GEIS (NYS00131A-I).

⁴⁷ FSEIS at xv (NYS00133A).

⁴⁸ NUREG-1555, Supp. 1, Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Operating License Renewal (Oct. 1999) (ENT00019B).

process.⁴⁹

23. In December 2008, the NRC Staff issued the DSEIS for public comment.⁵⁰ In the DSEIS, the NRC Staff documented its environmental justice analysis in Section 4.4.6 (Environmental Justice).⁵¹ The NRC Staff used the 50-mile radius surrounding IP2 and IP3 as the environmental impact area.⁵² To identify any environmental justice populations within that area, the NRC Staff used 2000 census Block Group data.⁵³ To identify minority and low-income populations, the NRC Staff used Council on Environmental Quality (“CEQ”) definitions for “minority individuals,” “minority populations,” and “low-income populations.”⁵⁴ The DSEIS identified a census Block Group as containing an environmental justice population if more than: (1) 50 percent of the Block Group’s population was minority; or (2) 14.5 percent of the Block Group’s population was low-income.⁵⁵

24. The DSEIS concluded that IP2 and IP3 license renewal would not impose disproportionately high and adverse impacts on minority and low-income populations.⁵⁶ This conclusion was based, in part, on the analysis of environmental health and safety impacts presented in DSEIS Chapters 2 and 4.⁵⁷

⁴⁹ See NUREG-1437, Supp. 38, Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3, Draft Report for Comment at xiii (Dec. 2008) (“DSEIS”) (NYS00132A).

⁵⁰ Indian Point Nuclear Generating Unit Nos. 2 and 3; Notice of Availability of the Draft Supplement 38 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meeting for the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3, 73 Fed. Reg. 80,440 (Dec. 31, 2008).

⁵¹ DSEIS § 4.4.6 (NYS00132B).

⁵² *Id.* at 4-45.

⁵³ *Id.*

⁵⁴ *Id.* at 4-44 to -45.

⁵⁵ *Id.* at 4-45.

⁵⁶ *Id.* at 4-45 to -46.

⁵⁷ *Id.* at 4-48 to -49.

25. In addition to the DSEIS environmental justice analysis, DSEIS Section 5.1.2 (Severe Accidents) adopted the GEIS conclusion that the probability-weighted impacts of severe accidents are SMALL.⁵⁸

26. To assist the public, the NRC Staff held public meetings in Cortlandt Manor, New York.⁵⁹ During those meetings, the Staff described the preliminary results of the NRC environmental review (as documented in the DSEIS), answered questions, and provided members of the public with information to assist them in formulating comments.⁶⁰ The Staff ultimately received comments from 183 individuals or groups, including Clearwater, and 88 commenters spoke during the public meetings.⁶¹ Clearwater's comments on the DSEIS largely mirrored the claims in CW-EC-3.⁶² For example, Clearwater claimed that the Staff's analysis should have used census Blocks, rather than census Block Groups, and should have considered low-income and minority populations' ability to evacuate (accounting for their greater reliance on public transportation) and potential impacts on special facility residents (including the disabled, hospital patients, and prisoners).⁶³

C. FSEIS Environmental Justice Evaluation and Amended Contention CW-EC-3A

27. In December 2010, the NRC Staff issued the FSEIS.⁶⁴ Like the DSEIS, FSEIS Section 4.4.6 addresses potential environmental justice impacts associated with license

⁵⁸ *Id.* at 5-3.

⁵⁹ FSEIS, Vol. 1 at xvi (NYS00133A).

⁶⁰ *See id.*

⁶¹ *Id.* at A-2 (NYS000133C). Many of these comments supported license renewal. *See id.* at A-58 (NYS000133D).

⁶² *Id.* at A-714 to A-720, A-724 to A-728, A-724 to A-731 (NYS00133F).

⁶³ *Id.* at A-715 to A-731.

⁶⁴ *Id.* at ii (NYS00133A).

renewal.⁶⁵ Again, the NRC Staff used the 50-mile radius as the environmental impact area, and 2000 census Block Group data to identify environmental justice populations in that area.⁶⁶ The FSEIS identifies a census Block Group as containing an environmental justice population if more than: (1) 50 percent of the Block Group's population was minority; or (2) 14.5 percent of the Block Group's population was low-income.⁶⁷

28. The FSEIS concludes that IP2 and IP3 license renewal would not impose disproportionately high and adverse impacts on minority and low-income populations.⁶⁸ This conclusion is, in part, based on the analysis of environmental health and safety impacts presented in FSEIS Chapters 2 and 4.⁶⁹

29. Section 4.4.6 of the FSEIS (environmental justice) unambiguously incorporates the GEIS Chapter 5 severe accident evaluation and conclusion that probability-weighted severe accident risks are SMALL, a finding that is not limited to particular populations or sub-populations and thereby applies to environmental justice populations, however defined.⁷⁰ Thus, the FSEIS Section 4.4.6 conclusion that continued operation during the license renewal period would cause no disproportionately high and adverse impacts to environmental justice populations, specifically accounts for, and rejects, the claim that there could be such disproportionate severe accident impacts.

⁶⁵ See *id.* at 4-49 (NYS00133B).

⁶⁶ See *id.* at 4-50.

⁶⁷ *Id.* at 4-50 to -51, 4-53.

⁶⁸ See *id.* at 4-53 to -56.

⁶⁹ See *id.*

⁷⁰ *Id.* at 4-53.

30. The FSEIS considers and addresses all comments received on the DSEIS,⁷¹ including Clearwater’s comments relevant to CW-EC-3.⁷² Regarding its use of census Block Groups, the NRC Staff stated that “Census block group data was [used] because poverty and income information is not available from Census at the block level.”⁷³ The NRC Staff further elaborated on the concern that it did not account for people living in institutional Group Quarters by explaining that “[a]ll minority and low-income people are considered in NRC’s assessment of environmental justice impacts regardless of whether they are immobilized with disabilities and/or institutionalized.”⁷⁴

31. The NRC Staff also addressed Clearwater’s emergency planning concerns, stating that evacuation and emergency planning accounts for all people, including environmental justice groups and the institutionalized:

Before a plant is licensed to operate, the NRC must have ‘reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.’ The NRC’s decision of reasonable assurance is based on licensees complying with NRC regulations and guidance. The emergency plans for nuclear power plants cover preparations for evacuation, sheltering, and other actions to protect residents near plants (including institutionalized persons) in the event of a serious incident. Nuclear power plant owners, government agencies, and State and local officials work together to create a system for emergency preparedness and response that will serve the public in the unlikely event of an emergency.⁷⁵

⁷¹ *Id.* at xvi (NYS00133A).

⁷² *See id.* at A-113 to -119 (NYS00133D).

⁷³ *Id.* at A-115.

⁷⁴ *Id.* at A-119.

⁷⁵ *Id.* at A-113.

The NRC Staff reiterated that during the 10 C.F.R. Part 54 rulemaking, the Commission explicitly considered and declined to review emergency planning issues for license renewal.⁷⁶

Thus, it is clear that the NRC Staff explicitly acknowledged and analyzed Clearwater's criticisms of the DSEIS environmental justice analysis, the same criticisms raised in Contention CW-EC-3 and subsequent amendments thereto.

32. In February 2011, Clearwater submitted amended Contention CW-EC-3A and requested that the Board recognize that its earlier contention also applied to the FSEIS.⁷⁷

Clearwater framed CW-EC-3A as a "technical change" to the previously-admitted contention, in that the amended contention claimed that the FSEIS environmental justice discussion is similarly deficient as the ER discussion; namely, it inadequately examines and discloses the potential that a severe accident at Indian Point would cause disproportionately significant and adverse radiological impacts on environmental justice populations.⁷⁸

33. Clearwater also sought to expand its original contention to claim that the FSEIS inadequately assesses the no-action alternative's impacts on environmental justice populations, and also that the FSEIS inadequately assesses a closed-cycle cooling alternative's impacts on air quality and environmental justice populations.⁷⁹

34. Entergy opposed Clearwater's proposed amendments to CW-EC-3 because those amendments: (1) challenged issues beyond the limited scope of license renewal proceedings;⁸⁰ (2) failed to demonstrate that the FSEIS includes materially different "new" information, as

⁷⁶ *Id.* at A-118 to -119.

⁷⁷ Motion for Leave to Amend and Extend Contention EC-3 Regarding Environmental Justice and Petition to Do So (Feb. 3, 2011), *available at* ADAMS Accession No. ML110410369.

⁷⁸ *See id.* at 3, 16, 19.

⁷⁹ *Id.* at 3-8.

⁸⁰ Applicant's Answer to Hudson River Sloop Clearwater, Inc.'s Amended Environmental Justice Contention at 2-3, 10 (Mar. 7, 2011), *available at* ADAMS Accession No. ML110770579.

required for timely newly-proposed contentions;⁸¹ and (3) otherwise failed to meet admissibility requirements set forth in Commission regulations.⁸² The NRC Staff also opposed Clearwater's proposed amendments for similar reasons.⁸³

35. Clearwater replied to the Entergy and the NRC Staff Answers.⁸⁴ Clearwater claimed that its proposed amendments were all necessary to "ensure" that the NRC met its NEPA obligations, irrespective of the Commission's admissibility rules.⁸⁵ Clearwater also argued that its amendments were timely and raised material issues.⁸⁶

36. The Board admitted CW-EC-3A in part, but rejected Clearwater's proposed amendments involving the no-action alternative and closed-cycle cooling alternative.⁸⁷ In this regard, we only allowed Clearwater to amend the original contention to permit Clearwater to

⁸¹ *Id.* at 3.

⁸² *Id.*

⁸³ NRC Staff's Answer to Amended and New Contention (EC-3) Filed by Hudson River Sloop Clearwater, Inc. Concerning the Final Supplemental Environmental Impact Statement at 2, 8-18 (Mar. 7, 2011), *available at* ADAMS Accession No. ML110670293. The NRC Staff opposed Clearwater's proposed amendments on the grounds that they raised concerns beyond the limited scope of license renewal and untimely, incorrectly, and immaterially challenged the FSEIS. *See id.* at 8-9, 9-18, 19-21.

⁸⁴ On March 4, 2011, Clearwater requested a one week extension, to March 21, 2011, for filing its reply to Entergy's and the Staff's Answers. Hudson River Sloop Clearwater, Inc.'s Urgent Request For Extension of Time to Reply to NRC Staff and Entergy's Answer to Amended Environmental Justice Contention (Mar. 4, 2011), *available at* ADAMS Accession No. ML110770144. On March 8, 2011, the Board granted Clearwater's request. Licensing Board Order (Granting Clearwater's Motion for Extension of Time) at 2 (Mar. 8, 2011) (unpublished).

⁸⁵ Combined Reply to NRC Staff and Entergy's Answers in Opposition to Clearwater's Motion for Leave and Petition to Amend Contention EC-3 at 2 (Mar. 21, 2011), *available at* ADAMS Accession No. ML11108A106.

⁸⁶ *Id.* at 3-10. On March 29, 2011, Entergy moved to strike two new declarations and supporting exhibits in Clearwater's Combined Reply. Applicant's Motion to Strike Portions of Hudson River Sloop Clearwater, Inc.'s Reply and Associated Declarations at 1 (Mar. 29, 2011), *available at* ADAMS Accession No. ML110980606. The NRC Staff supported Entergy's Motion and Clearwater opposed. *See* NRC Staff's Answer to Applicant's Motion to Strike Portions of Hudson River Sloop Clearwater, Inc.'s Reply and Associated Declarations at 1 (Apr. 8, 2011), *available at* ADAMS Accession No. ML110980760; Petitioner's Opposition to Entergy's Motion to Strike (Apr. 8, 2011), *available at* ADAMS Accession No. ML11115A054. Entergy's motion to strike was effectively mooted by the Board's decision to only admit Clearwater's "technical change" to its previously-admitted contention, which alleged that the FSEIS environmental justice discussion was deficient in a manner similar to the ER discussion. *See* Licensing Board Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) at 59-60 (July 6, 2011) ("July 6, 2011 Order") (unpublished).

⁸⁷ July 6, 2011 Order at 59-60 (July 6, 2011).

allege that the FSEIS fails to adequately address purported disparate severe accident impacts on environmental justice populations.⁸⁸

37. Thus, as admitted, CW-EC-3A's scope is limited to whether the FSEIS adequately examines and discloses the potential that a severe accident at Indian Point would cause disproportionately significant and adverse radiological impacts on environmental justice populations.⁸⁹ While this may involve some ancillary discussion of emergency planning activities as they relate to environmental justice populations, as the Board repeatedly reiterated, most recently during the evidentiary hearing, emergency planning activities, particularly, the adequacy of the Indian Point emergency plan, are immune to challenge in this proceeding.⁹⁰

D. Clearwater's December 2011 Prefiled Testimony and Entergy's First Motion in Limine

38. On December 22, 2011, Clearwater submitted its Statement of Position,⁹¹ written direct testimony,⁹² and supporting exhibits on CW-EC-3A.⁹³ Clearwater submitted prefiled

⁸⁸ See *id.* at 56, 60. The Board rejected Clearwater's proposed amendments involving the no-action and closed-cycle cooling alternatives on "timeliness and materiality grounds," noting that Clearwater failed to provide supporting facts or expert opinion. *Id.* at 58-59.

⁸⁹ July 6, 2011 Order at 60. As discussed above, consistent with Commission precedent, the Board and this Decision treat CW-EC-3A as a challenge to the FSEIS and thus focus discussion on the FSEIS and related evidence.

⁹⁰ See Official Transcript of Proceedings, Indian Point Nuclear Generating Units 2 & 3, at 2735:3-10 (Judge McDade) ("Oct. 23, 2012 Tr.") ("Now, also we want to make clear this isn't a challenge to the evacuation plan. This isn't a challenge to a SAMA. What this is is, rather, a challenge to an alleged lack of analysis into the potential for disproportional increased exposure to radiation to the environmental justice community and lack of discussion of viable mitigating factors that would limit such disproportionate exposure.").

⁹¹ Initial Statement of Position for Clearwater's Contention EC-3A Regarding Environmental Justice (Dec. 22, 2011) ("Clearwater Position Statement") (CLE000002).

⁹² Testimony of Dr. Michael Edelstein in Support of Hudson River Sloop Clearwater, Inc.'s Contention Regarding Environmental Justice (Dec. 22, 2011) ("Edelstein Direct Testimony") (CLE000003); Initial Prefiled Written Testimony of Manna Jo Greene Regarding Clearwater's Environmental Justice Contention EC-3A (Dec. 22, 2011) ("Greene Direct Testimony") (CLE000010); Initial Prefiled Written Testimony of Erik A. Larsen, MD, FACEP Regarding Clearwater's Environmental Justice Contention EC-3A (Dec. 22, 2011) ("Larsen Direct Testimony") (CLE000005); Initial Prefiled Written Testimony of Aaron Mair Regarding Clearwater's Environmental Justice Contention (Dec. 22, 2011) ("Mair Direct Testimony") (CLE000007); Initial Prefiled Written Testimony of Stephen Filler Regarding Clearwater's Environmental Justice Contention EC-3A (Dec. 22, 2011) ("Filler Direct Testimony") (CLE000009); Initial Prefiled Testimony of Anthony Papa in Support of Hudson River Sloop Clearwater, Inc.'s Contention Regarding Environmental Justice (EC-3A)

direct testimony by Dr. Michael Edelstein, Ms. Manna Jo Greene, Dr. Erik A. Larsen, Mr. Aaron Mair, Mr. Stephen Filler, Mr. Anthony Papa, Mr. John Simms, and Ms. Dolores Guardado. Clearwater indicated that Dr. Edelstein was testifying as an expert witness;⁹⁴ Ms. Greene and Dr. Larsen were testifying in their “professional capacities;”⁹⁵ and Mr. Mair, Mr. Filler, Mr. Papa, Mr. Simms, and Ms. Guardado were testifying in their “individual capacities.”⁹⁶

39. Contrary to the Board’s prior direction and the admitted contention’s settled scope, Clearwater’s Position Statement and testimony directly challenged the adequacy of Indian Point emergency planning, thereby ignoring that we ruled that such claims are outside the scope of this proceeding and NEPA.⁹⁷ For example, Dr. Edelstein’s direct testimony extensively discussed the alleged lack of evacuation plans for Sing Sing prisoners, the purported risks in evacuating prisoners even with evacuation plans, the supposed ineffectiveness of sheltering-in-place (in accordance with existing emergency plans) due to poor building conditions, and the potential for prison violence and riots during an evacuation or sheltering.⁹⁸ Dr. Edelstein further asked that the Board consider emergency planning changes and improvements at Indian Point

(Dec. 22, 2011) (“Papa Direct Testimony”) (CLE000004); Testimony of John Simms in Support of Hudson River Sloop Clearwater, Inc.’s Contention Regarding Environmental Justice (Dec. 22, 2011) (“Simms Direct Testimony”) (CLE000006); Initial Prefiled Written Testimony of Dolores Guardado Regarding Clearwater’s Environmental Justice Contention EC-3A (Dec. 22, 2011) (“Guardado Direct Testimony”) (CLE000008).

⁹³ See Exhs. CLE000001 through CLE000043.

⁹⁴ Edelstein Direct Testimony at 1 (CLE000003).

⁹⁵ Greene Direct Testimony at 1 (CLE000010); Larsen Direct Testimony at 1 (CLE000005). By only generally stating that they are offering testimony in their “professional” capacity, it is unclear that these witnesses intended to testify as experts. Because of this ambiguity and the lack of evidence demonstrating relevant expertise on the specific technical subjects at issue, we treat these witnesses as fact witnesses.

⁹⁶ Mair Direct Testimony at 1 (CLE000007); Filler Direct Testimony at 1 (CLE000009); Papa Direct Testimony at 1 (CLE000004); Simms Direct Testimony at 1 (CLE000006); Guardado Direct Testimony at 1 (CLE000008). It seems clear to the Board that these witnesses are not offered as experts. Given the lack of evidence demonstrating relevant expertise on the specific technical subjects at issue, we also treat these witnesses as fact witnesses.

⁹⁷ Clearwater Position Statement at 21 (CLE000002).

⁹⁸ Edelstein Direct Testimony at 3-4 (CLE000003).

and Sing Sing.⁹⁹ Similarly, Ms. Greene’s direct testimony summarized interviews Clearwater conducted at various facilities “to assess their level of preparedness and ability to evacuate if there should be a radiological emergency at Indian Point that required an emergency response.”¹⁰⁰

40. Entergy filed a Motion in Limine to exclude portions of Clearwater’s direct testimony and certain Clearwater exhibits.¹⁰¹ Entergy argued that: (1) the testimony constituted direct challenges to emergency plans, which are not permitted in license renewal proceedings; (2) testimony on psychological impacts, terrorism, and mistreatment of prisoners is outside the scope of NEPA; (3) testimony on impacts to non-institutional and non-environmental justice populations is outside the scope of CW-EC-3A; (4) Dr. Edelstein and Ms. Greene each lacked the requisite expertise on certain subjects their testimony covered; and (5) several fact witnesses lacked personal knowledge necessary to testify on emergency planning and other issues.¹⁰² The NRC Staff supported Entergy’s Motion¹⁰³ and Clearwater opposed it.¹⁰⁴

41. The Board denied Entergy’s Motion in Limine, but noted that we would distinguish between testimony merely criticizing emergency plans and testimony describing *how* a severe accident would adversely harm environmental justice populations in comparison to the

⁹⁹ *Id.*

¹⁰⁰ Greene Direct Testimony at 3 (CLE000010) (emphasis added).

¹⁰¹ Entergy’s Motion in Limine to Exclude Portions of Pre-filed Testimony and Exhibits for Contention CW-EC-3A (Environmental Justice) at 6 (Jan. 30, 2012), *available at* ADAMS Accession No. ML12030A200.

¹⁰² *Id.* at 7-24.

¹⁰³ NRC Staff’s Response in Support of Entergy’s Motion in Limine to Exclude Portions of Pre-Filed Testimony and Exhibits for Contention CW-EC-3A (Environmental Justice) (Feb. 9, 2012), *available at* ADAMS Accession No. ML12040A313.

¹⁰⁴ Clearwater’s Reply in Opposition to Entergy’s Motion in Limine (Feb. 17, 2012), *available at* ADAMS Accession No. ML12048B478.

general population.¹⁰⁵ In denying Entergy’s Motion, we also noted that, in ruling on the merits, we would discount the weight of Clearwater’s evidence that focused on non-environmental justice populations.¹⁰⁶ Thus, in this Decision, we have discounted testimony to the extent it criticized emergency plans and/or focusing on non-environmental justice populations, as it is outside the scope of this proceeding and contention.

42. Clearwater errs in relying on the admission of CW-EC-3A as evidence that emergency planning issues may be challenged through a NEPA contention. The Board never authorized Clearwater to challenge the effectiveness or sufficiency of Indian Point emergency plans.¹⁰⁷ Nor could the Board do so under binding Commission precedent.¹⁰⁸ Instead, we merely held that CW-EC-3A was admissible, in part, notwithstanding the likelihood that emergency planning activities may be discussed during a hearing on the merits of whether the FSEIS adequately examines and discloses whether a severe accident at Indian Point would cause disproportionate significant and adverse radiological impacts on environmental justice populations residing within a 50-mile radius.

¹⁰⁵ Licensing Board Order (Granting in Part and Denying in Part Applicant’s Motions *in Limine*) at 35 (Mar. 6, 2012) (“March 6, 2012 Order”) (unpublished) (“At evidentiary hearing, the Board is capable of distinguishing between disparaging comments against Indian Point’s emergency plans and Clearwater’s witnesses’ descriptions of how certain [environmental justice] populations will be adversely harmed by a severe accident compared to the general population.”).

¹⁰⁶ *Id.* at 35 (“To the extent any populations that Clearwater’s witnesses describe do not fit within the definition of an [environmental justice] population and are not necessary to an [environmental justice] analysis, we will discount the weight of such evidence in ruling on the merits of the FSEIS’s [environmental justice] analysis.”).

¹⁰⁷ In admitting CW-EC-3, the Board made clear that it was *not* admitting a contention claiming that Indian Point emergency plans are deficient. *See Indian Point*, LBP-08-13, 68 NRC at 201.

¹⁰⁸ *See Pilgrim*, CLI-10-11, 71 NRC at 302 (ruling that witness statements on “the issue of emergency planning—the need to provide accurate, ‘real time’ projections of the location and duration of potential public exposures to determine whether, when, and where particular population groups may need to be evacuated” are beyond the scope of a license renewal severe accident mitigation alternative review—a NEPA-based review); *see also Indian Point*, LBP-08-13, 68 NRC at 149 (“[T]he NRC Regulation dealing with emergency plans, 10 C.F.R. § 50.47(a)(1)(i), provides that no finding relating to emergency planning is necessary for issuance of a renewed nuclear power reactor operating license” and thus, “[t]his language places consideration of emergency plans outside the scope of this proceeding and is supported by NRC case law.”) (emphasis added)).

E. Entergy's and the NRC Staff's March 2012 Prefiled Testimony

43. On March 29, 2012, Entergy filed its Statement of Position;¹⁰⁹ Mr. Donald P. Cleary's, Mr. Jerry L. Riggs's, and Mr. Michael J. Slobodien's written testimony;¹¹⁰ and supporting exhibits.¹¹¹ In its Position Statement, Entergy argued that: (1) the FSEIS's identification of environmental justice populations complies fully with NEPA and NRC guidance; (2) the FSEIS appropriately adopts the GEIS finding that severe accident risks are SMALL for all populations, including environmental justice populations; (3) Indian Point, state, and local emergency plans provide reasonable assurance of adequate protection of all members of the public, including environmental justice populations; and (4) Clearwater's argument that emergency planning improvements are needed as "mitigation" under NEPA lacks merit.¹¹²

44. On March 30, 2012, the NRC Staff filed its Statement of Position;¹¹³ Jeffrey J. Rikhoff's and Patricia A. Milligan's written testimony;¹¹⁴ and supporting exhibits.¹¹⁵ In its Position Statement, the NRC Staff argued that: (1) environmental justice analysis in the FSEIS fully complies with NEPA;¹¹⁶ and (2) Clearwater made an unreasonable and speculative

¹⁰⁹ Entergy's Statement of Position on Contention CW-EC-3A (Environmental Justice) (Mar. 29, 2012) ("Entergy Position Statement") (ENT000257).

¹¹⁰ Entergy Testimony (ENT000258).

¹¹¹ See Exhs. ENT000008, ENT000014, ENT0015B, ENT000133, ENT000136, ENT000259 through ENT000278, and ENT000280 through ENT000299.

¹¹² Entergy Position Statement at 2-5 (ENT000257). Entergy also continued to emphasize that Commission regulations barred emergency planning issues from consideration in license renewal proceedings, and that Clearwater's witnesses lacked qualifications to offer certain testimony. *Id.* at 10.

¹¹³ NRC Staff Initial Statement of Position Regarding Contention CW-EC-3A (Environmental Justice) (Mar. 30, 2012) ("NRC Staff Position Statement") (NRC000062).

¹¹⁴ NRC Staff Testimony of Jeffrey J. Rikhoff and Patricia A. Milligan Regarding Contention CW-EC-3A (Environmental Justice) (Mar. 30, 2012) ("NRC Staff Testimony") (NRC000063).

¹¹⁵ See Exhs. NRC000064 through NRC000075.

¹¹⁶ NRC Staff Position Statement at 10-16 (NRC000062).

assumption that Indian Point emergency plans are deficient and would cause disproportionately high and adverse impacts on prison and special needs populations.¹¹⁷

F. Clearwater’s June 2012 Prefiled Rebuttal Testimony and Associated Motions in Limine

45. On June 28, 2012, Clearwater filed its revised statement of position,¹¹⁸ Dr. Edelstein’s, Ms. Greene’s, and Dr. Andrew S. Kanter’s written rebuttal testimony,¹¹⁹ and several new exhibits.¹²⁰ Clearwater’s rebuttal filings continued to raise broad emergency planning challenges and issues concerning non-environmental justice populations.¹²¹ Clearwater also made five new arguments: (1) potential impact on Sing Sing prisoners cannot be excluded as purely psychological effects;¹²² (2) the FSEIS fails to follow Commission guidance because it does not examine unusual characteristics or peculiar factors that could disparately impact environmental justice populations;¹²³ (3) the NRC Staff’s own admissions, and environmental justice assessments at other sites, demonstrate the FSEIS’s inadequacies;¹²⁴ (4) the GEIS finding of SMALL severe accident impacts is irrelevant;¹²⁵ and (5) the NRC Staff must amend the FSEIS to include more detailed analysis of environmental justice populations, potential adverse

¹¹⁷ *Id.* at 16-23.

¹¹⁸ Hudson River Sloop Clearwater, Inc. Rebuttal Statement Supporting Contention EC-3A Regarding Environmental Justice (June 28, 2012) (“Clearwater Rebuttal Position Statement”) (CLE000045) .

¹¹⁹ Rebuttal Testimony of Michael Edelstein Regarding Clearwater’s Environmental Justice Contention EC-3A (June 28, 2012) (“Edelstein Rebuttal Testimony”) (CLE000047); Rebuttal Testimony of Manna Jo Greene Regarding Clearwater’s Environmental Justice Contention EC-3A (June 28, 2012) (“Greene Rebuttal Testimony”) (CLE000046); Rebuttal Testimony of Dr. Andrew S. Kanter, M.D. M.P.H. in Support of Hudson River Sloop Clearwater, Inc.’s Contention EC-3A Regarding Clearwater’s Environmental Justice (June 28, 2012) (“Kanter Rebuttal Testimony”) (CLE000048).

¹²⁰ *See* Exhs. CLE000049 through CLE000059.

¹²¹ *See, e.g.*, Edelstein Rebuttal Testimony at 2 (A5) (CLE000047); Kanter Rebuttal Testimony at 2-9 (A4-11) (CLE000048).

¹²² Clearwater Rebuttal Position Statement at 17 (CLE000045).

¹²³ *Id.* at 5.

¹²⁴ *Id.* at 2, 4.

¹²⁵ *Id.* at 13.

effects on those populations, and potential mitigation measures.¹²⁶ Clearwater also incorrectly argued that the Board’s March 6, 2012, Motion in Limine Order authorized Clearwater to raise such issues.¹²⁷ To the contrary, our March 6, 2012, Motion in Limine Order clearly explained that we would distinguish potentially-relevant evidence from irrelevant emergency plan challenges and irrelevant non-environmental justice population concerns.¹²⁸

46. Entergy and the NRC Staff each filed Motions in Limine seeking to exclude portions of Clearwater’s rebuttal testimony.¹²⁹ Clearwater opposed both motions.¹³⁰ In particular, Entergy and the NRC Staff sought to exclude select testimony and certain Clearwater exhibits, arguing that Clearwater’s rebuttal testimony: (1) again contained broad challenges to emergency plan adequacy, contrary to the scope of CW-EC-3A and license renewal;¹³¹ (2) raised issues concerning numerous non-environmental justice populations and vaguely-defined environmental justice subgroups, contrary to Commission precedent and NRC Staff guidance;¹³² (3) raised various other issues outside the scope of CW-EC-3A and the proceeding, including

¹²⁶ *Id.* at 32.

¹²⁷ *See, e.g.*, Green Rebuttal Testimony at 1 (A3) (CLE000046) (asserting that “the Board substantiated Clearwater’s claim that the [environmental justice] contention does not challenge the adequacy of emergency planning, but only seeks to emphasize the disparate context in which vulnerable [environmental justice] populations would find themselves . . . during a severe accident”).

¹²⁸ March 6, 2012 Order at 35.

¹²⁹ Entergy’s Motion In Limine To Exclude Portions Of Clearwater’s Rebuttal Filings On Contention CW-EC-3A (Environmental Justice) (July 30, 2012) (“Entergy Rebuttal Motion in Limine”), *available at* ADAMS Accession No. ML12212A345; NRC Staff’s Motion in Limine to Exclude Portions of Pre-Filed Rebuttal Testimony and Rebuttal Exhibits Regarding Contention CW-EC-3A (Environmental Justice) (July 30, 2012) (“NRC Staff Rebuttal Motion in Limine”), *available at* ADAMS Accession No. ML12212A419.

¹³⁰ Clearwater’s Answer In Opposition To Entergy’s Motion In Limine To Exclude Portions Of Clearwater’s Rebuttal Testimony On Contention CW-EC-3A (Aug. 9, 2012), *available at* ADAMS Accession No. ML12222A459.

¹³¹ Entergy Rebuttal Motion in Limine at 2; NRC Staff Rebuttal Motion in Limine at 5.

¹³² Entergy Rebuttal Motion in Limine at 2; NRC Staff Rebuttal Motion in Limine at 5.

irrelevant new claims concerning evacuation-related environmental impacts from terrorist attacks;¹³³ and (4) contained unreliable information.¹³⁴

47. On October 15, 2012, the first day of evidentiary hearings, the Board issued a bench ruling denying all seven then-pending Motions in Limine, including Entergy's and the NRC Staff's Motions in Limine regarding CW-EC-3A.¹³⁵ The Board, however, again emphasized that CW-EC-3A does not involve and does not authorize emergency plan challenges.¹³⁶

G. Other Prehearing Procedural Matters

48. On August 8, 2012, New York filed a Motion with respect to its seven "Track 1" contentions,¹³⁷ seeking to invoke its purported statutorily-granted cross-examination rights under Section 274(l) of the Atomic Energy Act ("AEA"), 42 U.S.C. § 2021(l).¹³⁸ Specifically, New York claimed that as the host state to Indian Point, Section 274(l) confers upon it expansive cross-examination rights that take precedence over the restrictive cross-examination rights

¹³³ Entergy Rebuttal Motion in Limine at 2, 15; NRC Staff Rebuttal Motion in Limine at 5, 10.

¹³⁴ NRC Staff Rebuttal Motion in Limine at 5.

¹³⁵ Official Transcript of Proceedings, Indian Point Nuclear Generating Units 2 & 3 at 1265-66 (Judge McDade) (Oct. 15, 2012) ("Oct. 15, 2012 Tr.") (denying seven Motions in Limine on which the Board had yet to rule).

¹³⁶ See Oct. 23, 2012 Tr. at 2735 (Judge McDade) ("Now, also we want to make clear this isn't a challenge to the evacuation plan. This isn't a challenge to a SAMA. What this is, rather, a challenge to an alleged lack of analysis into the potential for disproportional increased exposure to radiation to the environmental justice community . . ."); see also *id.* at 2870:20-25 (Judge McDade) (reiterating that CW-EC-3A does not challenge Indian Point's evacuation plan, rather, focuses on alleged lack of analysis regarding disproportional impacts of radiation).

¹³⁷ Track 1 contentions consist of Riverkeeper TC-2 (Flow-Accelerated Corrosion), NYS-12C (SAMA Analysis – Decontamination Costs), NYS-16B (SAMA Analysis – Population Estimate), NYS-17B (Land Values), NYS-37 (Energy Alternatives), Clearwater EC-3A (Environmental Justice), NYS-5 (Buried Piping), NYS-6/7 (Non-EQ Cables), and NYS-8 (Transformers). Prior to the October 2012 hearings, the parties settled another Track 1 contention, Riverkeeper EC-3/Clearwater EC-1 (Spent Fuel Pool Leaks to Groundwater). The Board approved that settlement agreement on October 17, 2012. Licensing Board Consent Order (Approving Settlement of Consolidated Contention Riverkeeper EC-3 and Clearwater EC-1) (Oct. 17, 2012) (unpublished).

¹³⁸ State of New York Motion to Implement Statutorily-Granted Cross-Examination Rights Under Atomic Energy Act § 274(l) at 1 (Aug. 8, 2012), available at ADAMS Accession No. ML1221A483.

allowed pursuant to 10 C.F.R. §§ 2.315(c) and 2.1204(b)(3).¹³⁹ New York's Motion did not apply to Clearwater's contentions, including CW-EC-3A, nor did Clearwater file a motion to cross-examine witnesses.

49. Both Entergy and the NRC Staff opposed New York's Motion, stating that it lacked a legal basis,¹⁴⁰ arguing that New York mischaracterized as an "absolute right" what is actually a "reasonable opportunity" to cross-examine witnesses.¹⁴¹

50. On August 29, 2012, in accordance with 10 C.F.R. § 2.1207(a)(3) and the Board's Scheduling Order, Entergy (and the other parties) submitted *in camera* proposed questions for the Board to consider asking to the other parties' witnesses on CW-EC-3A.¹⁴²

51. In an Order issued on September 21, 2012, the Board granted, in part, New York's request for cross-examination of witnesses during the evidentiary hearings.¹⁴³ The Board concluded that New York had complied with 10 C.F.R. § 2.1204(b) by filing a motion for cross-examination and proposed examination questions before the August 29, 2012, deadline for those submittals.¹⁴⁴ It thus ruled that during the hearing, New York could examine witnesses following the Board's examination, as long as its questions were "relevant, reasonable, and non-repetitive."¹⁴⁵

¹³⁹ *Id.* at 15.

¹⁴⁰ See Entergy's Answer Opposing New York State's Motion to Cross-Examine (Aug. 20, 2012) ("Entergy Answer Opposing New York Motion"), available at ADAMS Accession No. ML12233A371; NRC Staff's Answer to State of New York's "Motion to Implement Statutorily-Granted Cross-Examination Rights under Atomic Energy Act § 274(l)" (Aug. 20, 2012) ("Staff Answer Opposing New York Motion"), available at ADAMS Accession No. ML12233A742.

¹⁴¹ See Entergy Answer Opposing New York Motion at 3-4; Staff Answer Opposing New York Motion at 9.

¹⁴² 10 C.F.R. § 2.1207(a)(3)(iii).

¹⁴³ Licensing Board Order (Order Granting, in Part, New York's Motion for Cross Examination) at 7 (Sept. 21, 2012) (unpublished).

¹⁴⁴ *Id.*

¹⁴⁵ See *id.*

52. The Board discussed its Order in a pre-hearing conference call in response to questions from the NRC Staff and Entergy.¹⁴⁶ During that conference, Chairman McDade confirmed that New York would have the opportunity to examine witnesses on “areas that the Board missed” in its own witness examinations.¹⁴⁷ He also stated that other parties would have a reasonable opportunity to interrogate witnesses on discrete issues through oral motions at the hearing if they made a “sufficiently compelling request” and avoided repetitive questions.¹⁴⁸

53. Subsequently, on September 28, 2012, Entergy filed an emergency petition for interlocutory review of the Board’s order with the Commission.¹⁴⁹ Entergy requested, and was granted, expedited briefing on its petition.¹⁵⁰ New York opposed Entergy’s petition¹⁵¹ and the Staff supported it.¹⁵²

54. On October 12, 2012, the Commission issued an Order denying Entergy’s request for interlocutory review, noting that the Board has the responsibility in the first instance to oversee the development of an adequate case record.¹⁵³ In so ruling, the Commission cited Chairman McDade’s assurances, made during the September 24, 2012 prehearing conference

¹⁴⁶ Official Transcript of Proceedings, Indian Point Nuclear Generating Units 1 & 2 [sic—2 & 3] at 1238 (Judge McDade) (Sept. 24, 2012).

¹⁴⁷ *Id.* at 1238:2 (Judge McDade).

¹⁴⁸ *Id.* at 1239:21-23 (Judge McDade).

¹⁴⁹ Entergy’s Emergency Petition for Interlocutory Review of Board Order Granting Cross-Examination to New York State and Request for Expedited Briefing (Sept. 28, 2012), *available at* ADAMS Accession No. ML12272A363.

¹⁵⁰ *See id.* at 1; *Entergy Nuclear Generation Co.* (Indian Point Nuclear Generating Units 2 & 3), CLI-12-18, 76 NRC ___, slip op. at 1-2 (Oct. 12, 2012).

¹⁵¹ State of New York Combined Opposition to Entergy’s Requests for Emergency Stay and Interlocutory Review of the Board Order Granting Limited Cross Examination (Oct. 1, 2012), *available at* ADAMS Accession No. ML12275A327. Entergy replied in opposition to New York’s answer. *See* Entergy’s Reply to New York State’s Opposition to Entergy’s Emergency Petition for Interlocutory Review (Oct. 8, 2012), *available at* ADAMS Accession No. ML12282A002.

¹⁵² NRC Staff’s Answer to Entergy’s Emergency Petition for Interlocutory Review, and Application for Stay, of the Board’s Order of September 21, 2012 (Oct. 5, 2012), *available at* ADAMS Accession No. ML12279A309.

¹⁵³ *Indian Point*, CLI-12-18, slip op. at 6.

call, that the Board would prohibit open-ended, lengthy, repetitive, and immaterial cross-examination, and allow all parties a full and fair opportunity to request cross-examination.¹⁵⁴

The Commission further stated its expectation that the Board would act on cross-examination requests fairly and evenhandedly, rigorously oversee any cross-examination it allowed, and limit the cross-examination “to supplemental and genuinely material inquiries, necessary to develop an adequate and fair record.”¹⁵⁵

55. During the hearing on the first contention (Riverkeeper TC-2), the Board indicated that it would allow questioning of the witnesses by the petitioner (there, Riverkeeper), Entergy, and the NRC Staff.¹⁵⁶ Entergy objected to examination of witnesses by any party, and requested that the Board close the record.¹⁵⁷ In support of its position, Entergy: (1) noted that Riverkeeper had not made, nor been required to make, the sort of showing contemplated by the Subpart L regulations, which was a circumstance that the Commission had found “troubling”; (2) argued that no sufficient constraints had been placed on examination by parties; (3) noted that the procedure, rather than constituting the “rare occurrence” contemplated by the Commission, was apparently being undertaken as the norm for these proceedings; and (4) argued that, with two full days of Board questioning, additional questioning by the parties was not “truly necessary,” as mandated by the Commission.¹⁵⁸ In the alternative, Entergy requested reciprocal

¹⁵⁴ *Id.* at 3-4.

¹⁵⁵ *Id.* at 7.

¹⁵⁶ Official Transcript of Proceedings, Indian Point Nuclear Generating Units 2 & 3, at 1797:16-24 (Judge McDade) (Oct. 17, 2012) (“Oct. 17, 2012 Tr.”).

¹⁵⁷ *Id.* at 1794:11-1797:15 (Fagg).

¹⁵⁸ *Id.* (Fagg).

treatment; *i.e.*, that it be afforded the same direct and cross-examination rights as the other parties.¹⁵⁹

56. The Board denied Entergy's motion to preclude party examination of witnesses, stating any additional showing need not be articulated, and that the Board envisioned allowing Riverkeeper, then Entergy, and then the Staff brief opportunities to conduct limited interrogation of the witnesses.¹⁶⁰ During hearing on the second contention (NYS-12C), Entergy reiterated its objection, which was overruled by the Board, and Entergy asked that the Board recognize Entergy's standing objection on such grounds with respect to all remaining contentions.¹⁶¹ Upon that basis, Entergy rested upon its standing objection, and did not repeat its procedural arguments in connection with CW-EC-3A or subsequent contentions.

H. The October 2012 Evidentiary Hearing on CW-EC-3A

57. On October 15, 2012, the Board commenced the evidentiary hearing on the Track 1 contentions at the DoubleTree Hotel located at 455 South Broadway, Tarrytown, New York 10591, and admitted into evidence the exhibits proffered by the parties.¹⁶² We held the CW-EC-3A oral evidentiary hearing on October 23, 2012¹⁶³ and had a court certified Spanish-language interpreter available for Ms. Guardado.¹⁶⁴

58. The Board conducted the hearing in accordance with the provisions of 10 C.F.R. Part 2, Subpart L. Per our September 21, 2012 Order, and the Commission's related guidance in

¹⁵⁹ *Id.* at 1797:8-14 (Fagg).

¹⁶⁰ *Id.* at 1797:16-1798:9 (Judge McDade).

¹⁶¹ Official Transcript of Proceedings, Indian Point Nuclear Generating Units 2 & 3, at 2315:17-2316:2 (Bessette) (Oct. 18, 2012) ("Oct. 18, 2012 Tr.").

¹⁶² Oct. 15, 2012 Tr. at 1268:21-1269:1.

¹⁶³ Oct. 23, 2012 Tr. at 2722.

¹⁶⁴ *Id.* at 2732:15-17, 2785:5-8 (Judge McDade). No party objected to the translator's qualifications. *See id.* at 2785:8-19.

CLI-12-18, the Board permitted limited cross-examination and redirect examination by all parties. Specifically, after the Board completed its questioning of the parties' witnesses, it afforded counsel for all parties the opportunity to ask relevant, non-repetitive redirect and cross-examination questions to the witnesses. Entergy questioned the witnesses on CW-EC-3A first, followed by Clearwater and then the NRC Staff.¹⁶⁵

59. The CW-EC-3A hearing concluded on the evening of October 23, 2012. The parties jointly submitted proposed corrections to the hearing transcripts on December 5, 2012.¹⁶⁶ On December 27, 2012, the Board issued an Order adopting the parties' proposed transcript corrections with some minor revisions.¹⁶⁷

60. On March 22, 2013, the parties submitted proposed findings of fact and conclusions of law in the form of a proposed Initial Decision by the Board.

I. Clearwater's Motions to Supplement the Record with New Exhibits

61. After the October hearing, Clearwater submitted two Motions to Supplement the Record with new exhibits. On November 14, 2012, Clearwater filed a Motion to Supplement the Record with eleven exhibits, largely second-hand media reports describing Hurricane Sandy's impact on alleged environmental justice populations in the New York-metropolitan area.¹⁶⁸ On November 26, 2012, Clearwater filed a supplement to its first Motion, urging the Board to admit

¹⁶⁵ Oct. 23, 2012 Tr. at 2869:7-12 (Judge McDade, Webster, Tenpas) (agreeing on order); *id.* at 2870:14-16 (Judge McDade) (indicating that the NRC Staff would follow the other parties).

¹⁶⁶ Letter from Counsel for Entergy Nuclear Operations, Inc., Counsel for Riverkeeper, Inc., Counsel for the State of New York, Counsel for the NRC Staff, and Counsel for Hudson [River] Sloop Clearwater, Inc., to Lawrence G. Judge McDade, Chairman, Dr. Michael F. Kennedy, and Dr. Richard Wardwell, Atomic Safety and Licensing Board (Dec. 5, 2012), *available at* ADAMS Accession No. ML12340A546.

¹⁶⁷ Licensing Board Order (Adopting Proposed Transcript Corrections with Minor Edits) at 38-42 (Dec. 27, 2012) (unpublished) (revising the CW-EC-3A transcript to remove inaccurately-listed witnesses and revise grammatical errors).

¹⁶⁸ Hudson River Sloop Clearwater, Inc.'s Motion to Supplement the Record with Relevant New Information that Became Apparent After Hurricane Sandy (Nov. 14, 2012), *available at* ADAMS Accession No. ML12319A843.

four additional similar exhibits discussing Hurricane Sandy's impacts, including difficulties encountered with sheltering, evacuations, and power outages.¹⁶⁹

62. Entergy and the NRC Staff objected to the admission of Clearwater's new exhibits, arguing that Clearwater failed to demonstrate that these new exhibits were relevant to Indian Point or license renewal.¹⁷⁰ In particular, Entergy and the NRC Staff argued that Clearwater assumed, without basis, that flooding and power outage impacts caused by a hurricane in New York City and adjacent coastal areas are comparable to a hypothetical Indian Point severe accident's environmental impacts.¹⁷¹ Entergy highlighted that Clearwater's proposed new exhibits related to challenges faced by *all* populations during an extraordinary *natural* disaster along the northeast seaboard of the United States and thus, was not relevant to whether an Indian Point severe accident would result in disproportionately high and adverse impacts on environmental justice populations.¹⁷²

63. On December 5, 2012, the Board denied Clearwater's requests to supplement the record, holding that "the documents submitted by Clearwater dealing with an unrelated weather

¹⁶⁹ Hudson River Sloop Clearwater, Inc.'s Notice of Supplemental Exhibits to Motion to Supplement the Record With Relevant New Information That Became Apparent After Hurricane Sandy (Nov. 26, 2012), *available at* ADAMS Accession No. ML12331A381.

¹⁷⁰ Entergy's Answer Opposing Hudson River Sloop Clearwater's Motion To Supplement The Record With New Information That Became Apparent After Hurricane Sandy at 2 (Nov. 28, 2012) ("Entergy Answer Opposing Clearwater Motion To Supplement The Record"), *available at* ADAMS Accession No. ML12333A372; NRC Staff's Answer To "Hudson River Sloop Clearwater, Inc.'s Motion To Supplement The Record With Relevant New Information That Became Apparent After Hurricane Sandy" at 2 (Nov. 28, 2012) ("Staff Answer to Clearwater Motion to Supplement the Record"), *available at* ADAMS Accession No. ML12333A373.

¹⁷¹ Entergy Answer Opposing Clearwater Motion To Supplement The Record at 13; Staff Answer to Clearwater Motion to Supplement the Record at 15, 17. Entergy also opposed Clearwater's Supplemental Notice on similar grounds. Entergy's Answer Opposing Hudson River Sloop Clearwater's Second Motion to Supplement the Record (Nov. 30, 2012), *available at* ADAMS Accession No. ML12335A387.

¹⁷² Entergy Answer Opposing Clearwater Motion To Supplement The Record at 2.

event are immaterial and not relevant to the reasonableness of the NRC Staff's environmental justice review of Indian Point, Units 2 and 3.”¹⁷³

III. APPLICABLE LEGAL AND REGULATORY STANDARDS

A. NRC's NEPA Requirements

64. Two sets of regulatory requirements govern the NRC's review of license renewal applications. Under 10 C.F.R. Part 54, the NRC conducts a health and safety review focused on “the detrimental effects of aging” on the plant.¹⁷⁴ Under 10 C.F.R. Part 51, the NRC completes a NEPA-based environmental review, focusing on the potential impacts from operating for 20 additional years. As explained above, the contention at issue here—CW-EC-3A—arises under NEPA and the NRC's 10 C.F.R. Part 51 NEPA-implementing regulations.¹⁷⁵ As such, and as we defined the scope in admitting the contention, CW-EC-3A is not a challenge to emergency plans and therefore, does not challenge the scope or effectiveness of emergency plans, including whether those plans are adequately designed or are likely to work as designed.¹⁷⁶ Any such challenge has no place in a license renewal proceeding.¹⁷⁷

65. NEPA requires that federal agencies, such as the NRC, prepare an EIS for “major Federal actions significantly affecting the quality of the human environment.”¹⁷⁸ NEPA is a

¹⁷³ Licensing Board Order (Denying Clearwater's Motion to Supplement the Record) at 3 (Dec. 5, 2012) (“Dec. 5, 2012 Order”). The Board also noted that it could have alternatively denied the motion solely because Clearwater failed to properly consult with the other parties prior to submitting the motion, contrary to the Board's repeated emphasis on the importance of consultation. *Id.*

¹⁷⁴ *See* Final Rule, Nuclear Power Plant License Renewal: Revisions, 60 Fed. Reg. 22,461, 22,464 (May 8, 1995) (NYS000016).

¹⁷⁵ *Indian Point*, LBP-08-13, 68 NRC at 201.

¹⁷⁶ *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-05-24, 62 NRC 551, 560-61 (2005).

¹⁷⁷ *See Indian Point*, LBP-08-13, 68 NRC at 149-150, 165-166.

¹⁷⁸ 42 U.S.C. § 4332(2)(C) (2006).

procedural statute that does not mandate particular substantive results.¹⁷⁹ Rather, it is designed “to insure a fully informed and well-considered decision,” including examining the proposed agency action’s potential environmental impacts.¹⁸⁰ NEPA “merely prohibits uninformed—rather than unwise—agency action.”¹⁸¹

66. In 1996, the NRC published the license renewal GEIS. Based on the GEIS, Part 51, specifically, Table B-1, Appendix B to Subpart A of 10 C.F.R. Part 51 (“Table B-1”), divides license renewal into generic and plant-specific components.¹⁸² For each license renewal application, Part 51 requires that the NRC Staff prepare a supplement to the GEIS adopting applicable generic findings from the GEIS, evaluating any new and significant information, and addressing plant-specific impacts.¹⁸³

B. NRC’s Policy and Guidance on Environmental Justice

67. Table B-1 indicates that application-specific reviews will address “[t]he need for and the content” of an environmental justice analysis.¹⁸⁴ In other words, Part 51 makes clear that the NRC will determine on a case-by-case basis whether an environmental justice analysis is needed and, if some analysis is needed, the extent of that analysis.

68. “Environmental justice” for the purposes of this proceeding refers to the federal policy established in 1994 by Executive Order 12,898 under which each federal agency identifies and addresses, as appropriate, potentially disproportionately high adverse human health or

¹⁷⁹ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-51 (1989).

¹⁸⁰ *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 558 (1978).

¹⁸¹ *Robertson*, 490 U.S. at 351.

¹⁸² See Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. 28,467, 28,490 (June 5, 1996) (NYS000127), amended by 61 Fed. Reg. 66,537 (Dec. 18, 1996) (NYS000128).

¹⁸³ 10 C.F.R. § 51.95(c).

¹⁸⁴ 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1.

environmental effects of its programs, policies, and activities on minority or low-income populations.¹⁸⁵

69. In 1997, the CEQ issued guidance to assist agencies in identifying and addressing environmental justice issues through NEPA's procedures.¹⁸⁶ Using CEQ's guidelines as a model, in 2004, the NRC Staff's Office of Nuclear Reactor Regulation ("NRR") issued its own environmental justice guidance in LIC-203, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues."¹⁸⁷ Later in 2004, the Commission issued a "Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions," which endorses and incorporates LIC-203's environmental justice guidance.¹⁸⁸

70. The Commission's Environmental Justice Policy Statement makes clear that neither it nor Executive Order 12,898 establishes any new substantive or procedural requirements applicable to NRC regulatory or licensing activities.¹⁸⁹ The Environmental Justice Policy Statement also establishes three key points that are relevant to CW-EC-3A.

71. First, environmental justice issues are considered only when, and to the extent, required by NEPA. "NEPA is the only available statute under which the NRC can carry out the general goals of [Executive Order] 12898."¹⁹⁰

¹⁸⁵ Executive Order 12898, 59 Fed. Reg. at 7632 (ENT000259).

¹⁸⁶ Council on Environmental Quality, Environmental Justice, Guidance Under the National Environmental Policy Act at 1 (Dec. 10, 1997) ("CEQ Environmental Justice Guidance") (ENT000266).

¹⁸⁷ LIC-203, Rev. 1, App. D, at D-1 (ENT000261).

¹⁸⁸ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,040, 52,041, 52,046 (ENT000260).

¹⁸⁹ See Executive Order 12898, 59 Fed. Reg. at 7632-33 (ENT000259); NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (ENT000260).

¹⁹⁰ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 n.2 (ENT000260).

72. Second, NEPA is not the appropriate context in which to assess racial motivation and fairness or equity issues.¹⁹¹ “[W]ere NEPA construed broadly to require a full examination of every conceivable aspect of federally licensed projects, ‘available resources may be spread so thin that agencies are unable adequately to pursue protection of the physical environment and natural resources.’”¹⁹²

73. Third, the focus of an environmental justice review is “identifying and weighing *disproportionately significant and adverse* environmental impacts on *minority and low-income populations* that may be different from the impacts on the general population.”¹⁹³ Thus, under NEPA, the NRC need not consider an action’s impacts on populations that are not substantially minority or low-income. Moreover, even where such populations are potentially affected, an action has no environmental justice implications unless those potential environmental effects are “disproportionate” and “significant and adverse.”¹⁹⁴

C. NRC’s Regulations Governing Severe Accident Impacts

74. The NRC’s GEIS for license renewal generically evaluates severe accident impacts and provides the technical basis for the NRC’s conclusion in Table B-1 that “[t]he probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal and economic impacts from severe accidents are small for *all plants*.”¹⁹⁵ In other words, the GEIS addresses the impacts of severe accidents generically in

¹⁹¹ *Id.* at 52,045.

¹⁹² *Id.* (quoting *LES*, CLI-98-3, 47 NRC at 102-03 (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983))).

¹⁹³ *Id.* at 52,047 (emphasis added). *See also* Oct. 23, 2012 Tr. at 2738:14-17 (Rikhoff) (stating that the purpose of Executive Order 12898 was to require analysis of licensing action effects on minority and low-income populations).

¹⁹⁴ *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), CLI-02-20, 20, 56 NRC 147, 153 (2002).

¹⁹⁵ 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1 (Postulated Accidents; Severe accidents) (emphasis added). A severe accident is a beyond design-basis accident “involving multiple failures of equipment or function . . .

bounding fashion¹⁹⁶ and reflects the NRC's generic determination that, for all nuclear power plants, severe accident risks are SMALL.¹⁹⁷

75. This generic SMALL severe accident finding applies to all plants, including Indian Point. As such, no plant-specific severe accident impact evaluation is required or authorized in this proceeding.¹⁹⁸ Just as basic NEPA law limits the relevant analysis to environmental,¹⁹⁹ non-speculative,²⁰⁰ physical impacts,²⁰¹ the NRC's regulations and GEIS findings limit, factually and legally, the scope of the contention and the necessary content of the plant-specific analysis.

76. Notwithstanding the generic SMALL severe accident finding, the Commission requires additional plant-specific NEPA analysis of severe accident mitigation alternatives ("SAMAs").²⁰² This SAMA requirement ensures that applicants and the Commission consider plant and operational modifications that may reduce already-low severe accident risks. CW-EC-3A does not, however, address SAMAs.

whose likelihood is generally lower than design-basis accidents but where consequences may be higher." GEIS at 5-1 (NYS00131C).

¹⁹⁶ *Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station)*, CLI-12-15, 75 NRC ___, slip op. 5-6 (June 7, 2012) ("[Severe accident mitigation alternatives] analysis must also be understood against the backdrop of our Generic Environmental Impact Statement (GEIS), which contains a bounding, generic severe accident impacts analysis, applicable to all plants.").

¹⁹⁷ GEIS at 5-115 (NYS00131C).

¹⁹⁸ *See Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station)*, CLI-10-11, 71 NRC 287, 316 (2010) ("Because the GEIS provides a severe accident impacts analysis that envelopes the potential impacts at all existing plants, the environmental impacts of severe accidents during the license renewal term already have been addressed generically in bounding fashion.").

¹⁹⁹ *See Metro. Edison Co.*, 460 U.S. at 772-73.

²⁰⁰ *Vt. Yankee Nuclear Power Corp. (Vt. Yankee Nuclear Power Station)*, CLI-90-4, 31 NRC 333, 335 (1990); *see also Vt. Yankee Nuclear Power Corp. (Vt. Yankee Nuclear Power Station)*, CLI-90-7, 32 NRC 129, 131 (1990) (holding that "probability is the key to applying NEPA's rule of reason test" to severe accident contentions).

²⁰¹ *See Metro. Edison Co.*, 460 U.S. at 771, 773.

²⁰² *See Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses*, 61 Fed. Reg. at 28,480-81 (NYS000127).

D. Controlling NEPA Principles

77. Two tenets of NEPA precedent are relevant to determining whether the NRC has satisfied its statutory obligations with respect to CW-EC-3A. First, NEPA requires agencies to take a “hard look” at the environmental impacts of a proposed action and reasonable alternatives to that action, including possible mitigation alternatives.²⁰³ However, this “hard look” is “tempered by a practical rule of reason”²⁰⁴ that we must apply in determining whether the NRC Staff took the requisite “hard look” at the proposed action’s environmental impacts.²⁰⁵ Under the rule of reason, NEPA “does not call for certainty or precision, but an estimate of anticipated (not unduly speculative) impacts.”²⁰⁶ In the severe accident context, this means that the NRC need not consider mitigation action failures or other worst-case scenarios.²⁰⁷ Further, in the environmental justice context, the Commission has made clear that the rule of reason means that such an analysis need not evaluate “vaguely defined, shifting ‘subgroups’” within low-income and minority communities “because the potential universe of aggrieved individuals and groups is . . . ‘virtually infinite, limited only by one’s imagination.’”²⁰⁸

²⁰³ See *LES*, CLI-98-3, 47 NRC at 87-88; see also *Robertson*, 490 U.S. at 349 (holding that NEPA requires agencies to take a “hard look” at environmental consequences prior to taking major actions).

²⁰⁴ *Entergy Nuclear Generation Co. (Pilgrim Nuclear Power Station)*, CLI-10-22, 72 NRC 202, 208 (2010) (citing *Communities, Inc. v. Busey*, 956 F.2d 619, 626 (6th Cir. 1992); see also *Pilgrim*, CLI-10-11, 71 NRC at 316; *Hells Canyon Alliance v. U.S. Forest Serv.*, 227 F.3d 1170, 1184-85 (9th Cir. 2000)); *U.S. Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 767-69 (2004) (stating that the rule of reason is inherent in NEPA and its implementing regulations).

²⁰⁵ *New York v. Kleppe*, 429 U.S. 1307, 1311 (1976); see also *Pub. Citizen*, 541 U.S. at 767-69 (rule of reason is inherent in NEPA and its implementing regulations).

²⁰⁶ *La. Energy Servs., L.P. (Nat’l Enrichment Facility)*, CLI-05-20, 62 NRC 523, 536 (2005).

²⁰⁷ *Pilgrim*, CLI-12-15, slip op. at 27; see also *Vt. Yankee*, CLI-90-4, 31 NRC at 335.

²⁰⁸ *PFS*, CLI-02-20, 56 NRC at 155-56.

78. Second, NEPA is concerned with actual physical impacts to the environment.²⁰⁹ As the Supreme Court in *Metro. Edison* explained, the “theme of [NEPA] is sounded by the adjective ‘environmental,’” which means that NEPA does not require an agency to assess every impact on a project, but only those that have a “reasonably close causal relationship” with “a change in the physical environment.”²¹⁰ In *Metro. Edison*, the Supreme Court rejected a claim that NEPA required that the NRC consider allegations that the restart of one of the reactors at Three Mile Island would result in severe psychological health damage to nearby residents. The Supreme Court found that fear arising from the “risk” of a nuclear accident was not an effect caused by a change in the physical environment and, thus, did not warrant consideration under NEPA.²¹¹ Specifically, the Supreme Court held that the causal chain between the change in the environment and the “effect” at issue was “too attenuated.”²¹²

E. Standard of Review and Evidentiary Burden of Proof

79. The Board reviews contested issues *de novo*.²¹³ According to the Commission: “[W]hen resolving contentions litigated through the adversary process, [boards must] bring their own ‘*de novo*’ judgment to bear. In such cases, boards must decide, based on governing regulatory standards and the evidence submitted, whether the applicant has met its burden of proof (except where the NRC Staff has the burden).”²¹⁴

²⁰⁹ See *Metro. Edison Co.*, 460 U.S. at 774 (“this harm is simply too remote from the physical environment to justify requiring the NRC to evaluate the psychological health damage to these people that may be caused by renewed operation of TMI-1”).

²¹⁰ *Id.* at 772, 774.

²¹¹ *Id.* at 775-76.

²¹² *Id.* at 771, 774.

²¹³ *Exelon Generation Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-17, 62 NRC 5, 39 (2005); *La. Energy Serv., L.P.* (Claiborne Enrichment Ctr.), CLI-98-3, 47 NRC 77, 84 (1998).

²¹⁴ *Clinton*, CLI-05-17, 62 NRC at 39.

80. With respect to CW-EC-3A, Clearwater has the initial “burden of going forward”; *i.e.*, it must provide sufficient evidence to support the claims made in the admitted contention.²¹⁵ As a general matter, an intervenor cannot meet its burden by relying on unsupported allegations and speculation.²¹⁶ It must introduce sufficient evidence during the hearing phase to establish a *prima facie* case.²¹⁷ If it does so, then the burden shifts to the applicant and the NRC Staff to provide sufficient evidence to rebut the intervenor’s contention.²¹⁸

81. While the NRC Staff, not the applicant, has the burden of complying with NEPA,²¹⁹ the applicant also has the burden of proof in this licensing proceeding if it becomes a proponent of the challenged portion of the Staff’s FSEIS.²²⁰ From an evidentiary standpoint, the applicant’s and NRC Staff’s positions must be supported by a preponderance of the evidence.²²¹

²¹⁵ *AmerGen Energy Co. (Oyster Creek Nuclear Generating Station)*, CLI-09-7, 69 NRC 235, 269 (quoting *Consumers Power Co. (Midland Plant, Units 1 & 2)*, ALAB-123, 6 AEC 331, 345 (1973)) (“The ultimate burden of proof on the question of whether the permit or 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 a sufficient rebuttal to satisfy the Board that it should reject the contention as a basis for denial of the permit or license.”); *see also* *Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 554 (1978) (upholding this threshold test for intervenor participation in licensing proceedings); *Phila. Elec. Co. (Limerick Generating Station, Units 1 & 2)*, ALAB-262, 1 NRC 163, 191 (1975) (holding that the intervenors had the burden of introducing evidence to demonstrate that the basis for their contention was more than theoretical).

²¹⁶ *See Oyster Creek*, CLI-09-7, 69 NRC 268-70; *see also Phila. Elec. Co. (Limerick Generating station, Units 1 & 2)*, ALAB-857, 25 NRC 7, 13 (1987) (stating that an intervenor may not merely assert a need for more current information without having raised any questions concerning the accuracy of the applicant’s submitted facts).

²¹⁷ *See Oyster Creek*, CLI-9-07, 69 NRC at 268-70.

²¹⁸ *See, e.g.*, 10 C.F.R. § 2.325; *La. Power & Light Co. (Waterford Steam Electric Station, Unit 3)*, ALAB-732, 17 NRC 1076, 1093 (1983) (citing *Midland*, ALAB-123, 6 AEC at 345).

²¹⁹ *See, e.g., Duke Power Co. (Catawba Nuclear Station, Units 1 & 2)*, CLI-83-19, 17 NRC 1041, 1049 (1983).

²²⁰ *La. Energy Servs., L.P. (Claiborne Enrichment Ctr.)*, LBP-96-25, 44 NRC 331, 338-39 (1996) (citing *Pub. Serv. Co. of N.H. (Seabrook Station, Units 1 & 2)*, ALAB-471, 7 NRC 477, 489 n.8 (1978), *rev’d on other grounds*, CLI-97-15, 46 NRC 294 (1997)). As a practical matter, we note that Entergy and the NRC Staff are generally aligned in their positions; *i.e.*, they both view the FSEIS environmental justice analysis as reasonable under NEPA and Clearwater’s criticisms of that analysis as legally and factually unjustified.

²²¹ *See Pac. Gas & Elec. Co. (Diablo Canyon Nuclear Power Plant, Units 1 & 2)*, CLI-08-26, 68 NRC 509, 521 (2008) (ruling in favor of NRC Staff and the applicant because the record (which included written submissions and oral argument) “by a preponderance of the evidence,” indicated that the intervenor’s contention lacked

F. The Board's Decision Supplements and Amends the FSEIS

82. In accordance with these NEPA and administrative law principles, NRC hearings must focus on whether the NRC Staff has taken the required “hard look” at relevant, non-speculative environmental impacts.²²² Thus, NRC hearings must focus on whether the NRC Staff has “unduly ignored or minimized pertinent environmental effects.”²²³ But it is not a game of “gotcha,” in which the Staff’s work can be rejected based on trivial, speculative, regulatorily-foreclosed, or irrelevant considerations.²²⁴

83. In determining whether the environmental record in this proceeding is sufficient under NEPA and 10 C.F.R. Part 51, the Board considers the record as a whole, including the FSEIS and the evidentiary record for the hearing, as developed by the Board and the parties.²²⁵

As the Commission has explained:

Boards frequently hold hearings on contentions challenging the staff’s final environmental review documents. In such cases, “[t]he adjudicatory record and Board decision (and . . . any Commission appellate decisions) become, in effect, part of the FEIS.” Put another way, under our longstanding practice, the Staff’s review (the FEIS itself) and the adjudicatory record will become part of the environmental record of the decision.²²⁶

merit); *Pac. Gas & Elec. Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-763, 19 NRC 571, 577 (1984) (“In order to prevail . . . , the applicant’s position must be supported by a preponderance of the evidence.”). A preponderance of the evidence “requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence.” *Concrete Pipe & Products of Cal., Inc. v. Construction Laborers Pension Trust for S. Cal.*, 508 U.S. 602, 622 (1993) (internal quotation marks omitted).

²²² See *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97-98 (1983).

²²³ *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003); see also *Exelon Generating Co., LLC* (Early Site Permit for Clinton ESP Site), CLI-05-29, 62 NRC 801, 811 (2005) (“There may, of course, be mistakes in the [EIS], but in an NRC adjudication, it is Intervenor’s burden to show their significance and materiality. Our boards do not sit to flyspeck environmental documents or to add details or nuances.”) (internal quotes omitted).

²²⁴ See, e.g., *Clinton*, CLI-05-29, 62 NRC at 811.

²²⁵ See, e.g., *Nuclear Innovation North America LLC* (South Texas Project, Units 3 & 4), CLI-11-6, 74 NRC ___, slip op. at 7-8 (2011).

²²⁶ *Id.* (quoting *LES*, CLI-98-3, 47 NRC at 89).

84. Thus, after the Board considers the entire record of this proceeding, the FSEIS will be “deemed supplemented” by the Board’s decisions on NEPA contentions and by any subsequent Commission decision.²²⁷ Likewise, the NRC’s record of decision ultimately will include the Board and Commission decisions, which are based on the adjudicatory record.²²⁸ This process is codified at 10 C.F.R. § 51.102(c), which specifies:

When a hearing is held on the proposed action under the regulations in part 2 of this chapter or when the action can only be taken by the Commissioners acting as a collegial body, the initial decision of the presiding officer or the final decision of the Commissioners acting as a collegial body will constitute the record of decision. An initial or final decision constituting the record of decision will be distributed as provided in § 51.93.²²⁹

85. The Commission and its Boards have followed this process routinely and without exception, not only in the relatively-recent decisions cited above, but also in many more cases dating back decades.²³⁰ Under this well-established process, the Board may modify EIS conclusions and, if warranted, remedy an otherwise deficient EIS through its adjudicatory decision.²³¹ The Commission may also do so on appeal.²³²

²²⁷ *Pilgrim*, CLI-12-1, slip op. at 30 (citing *La. Energy Servs., L.P.* (Nat’l Enrichment Facility), CLI-05-28, 62 NRC 721, 731 (2005)).

²²⁸ *See, e.g., La. Energy Servs.* (Nat’l Enrichment Facility), CLI-06-15, 63 NRC 687, 707 n.91 (2006) (“Adjudicatory findings on NEPA issues, including our own in this decision, become part of the environmental ‘record of decision’ and in effect supplement the FEIS.”); *LES*, CLI-98-3, 47 NRC at 89.

²²⁹ Final Rule, Amendments to Adjudicatory Process Rules and Related Requirements, 77 Fed. Reg. 46,562, 46,600 (Aug. 3, 2012).

²³⁰ *See, e.g., Pac. Gas & Elec. Co.* (Diablo Canyon Power Plant Indep. Spent Fuel Storage Installation), CLI-08-26, 68 NRC 509, 526 (2008); *Hydro Res., Inc.* (P.O. Box 15910, Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31, 53 (2001) (“[T]he Presiding Officer’s incorporation into LBP-99-30 of a staff affidavit on costs and benefits also does not require FEIS supplementation . . . in an adjudicatory hearing, to the extent that any environmental findings by the Presiding Officer (or the Commission) differ from those in the FEIS, the FEIS is deemed modified by the decision.”); *Phila. Elec. Co.* (Limerick Generating Station, Units 1 & 2), ALAB-819, 22 NRC 681, 705-07 (1985), *aff’d in part and review otherwise declined*, CLI-86-5, 23 NRC 125 (1986), *remanded in part on other grounds sub nom. Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719 (3d Cir. 1989); *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347 (1975).

²³¹ *S. Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-09-7, 69 NRC 613, 733 (2009) (“[T]he record *now contains* sufficient evidence on dry cooling to support a conclusion that dry cooling would not be

86. The Commission has repeatedly authorized supplementation through the hearing record, most recently last year, when it revised and clarified Section 51.102(c).²³³ The well-established process in Section 51.102(c), which governs the resolution of environmental issues following an adjudicatory hearing, requires the Board to consider the adjudicatory record as a whole when evaluating the environmental impacts of the proposed action, to supplement the FSEIS as necessary, and to modify the NEPA analysis and conclusions, if warranted.

87. The U.S. Courts of Appeals, across multiple circuits, have consistently upheld the NRC's practice as consistent with the AEA²³⁴ and NEPA.²³⁵ Supplementation through public hearings, moreover, is not confined to the NRC.²³⁶ The rationale for allowing supplementation through the hearing process is straightforward—the NRC's hearing process allows for *greater*

preferable to the proposed wet cooling system at the Vogtle site. We thus conclude that the agency's NEPA obligations relative to the discussion of design alternatives have been satisfied with regard to dry cooling, and contention EC 1.3 is resolved on the merits in favor of the staff and SNC.”) (emphasis added).

²³² See *Dominion Nuclear N. Anna, LLC* (Early Site Permit for North Anna ESP Site), CLI-07-27, 66 NRC 215, 230 (2007) (“But *our own* examination of the entire administrative record leads us to conclude that the Staff's underlying review was sufficiently detailed to qualify as ‘reasonable’ and a ‘hard look’ under NEPA – even if the Staff's description of that review in the FEIS was not. Our explanation below provides an additional detailed discussion as part of the record on the alternative site review. We direct the Staff to include a similar level of detail in future FEIS analyses of alternative sites.”) (emphasis in original).

²³³ See Final Rule, Amendments to Adjudicatory Process Rules and Related Requirements, 77 Fed. Reg. at 46,586, 46,600.

²³⁴ See *Nuclear Info. & Res. Serv. v. NRC*, 509 F.3d 562, 568 (D.C. Cir. 2007) (holding that supplementing an EIS through the hearing record does not violate the AEA).

²³⁵ *Citizens for Safe Power, Inc. v. NRC*, 524 F.2d 1291 1294 n. 5 (D.C. Cir. 1975) (holding that the “deemed modified” principle did not depart “from either the letter or the spirit” of NEPA); *Ecology Action v. AEC*, 492 F.2d 998, 1001–02 (2nd Cir. 1974) (omissions from an FEIS can be cured by subsequent consideration of the issue in an agency hearing); *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 94 (1st Cir. 1978) (having “no trouble finding” that the NRC's supplementation process satisfies NEPA); see also *Pub. Serv. Co. of N.H.* (Seabrook Station, Units 1 & 2), CLI-78-1, 7 NRC 1 (1978).

²³⁶ See, e.g., *Pacific Alaska LNG Co.*, 9 FERC ¶ 61,334, 61,709 (“the CEQ General Counsel suggests that the matter should also be considered in the FEIS because the Commission proceeding does not provide the broad public review and comment required by NEPA. We disagree. Our final decision will address this issue in detail, based on the record in the proceeding. All interested parties have had an opportunity to contribute to that record, and our decision will therefore be based on full information. This procedure fully comports with the letter and spirit of NEPA.”) (citing *Aberdeen & Rockfish R.R. v. SCRAP*, 422 U.S. 289, 320-21 (1975); *Citizens For Safe Power, Inc. v. NRC*, 582 F.2d 87 (1st Cir. 1978)).

public participation than NEPA otherwise requires.²³⁷ In this respect, the Commission and the courts have uniformly rejected the argument that supplementing an EIS with the adjudicatory record in a contested proceeding would frustrate public participation in the NEPA process. Thus, contrary to Clearwater’s claim that the NRC Staff must amend the FSEIS to include “required” analysis of environmental justice impacts in order to relicense Indian Point,²³⁸ the Board itself may supplement the EIS with the adjudicatory record if we determine that the FSEIS analysis is deficient.

IV. FACTUAL FINDINGS AND LEGAL CONCLUSIONS

A. Witnesses and Evidence Presented

1. Entergy’s Expert Witnesses

88. Entergy presented a three-person witness panel consisting of Mr. Cleary, Mr. Riggs, and Mr. Slobodien. Entergy’s witnesses submitted written direct testimony and gave oral testimony at the evidentiary hearing.²³⁹

89. Mr. Cleary is an Environmental Safety Consultant with Talisman International, LLC.²⁴⁰ He holds a Bachelor of Arts degree in Economics from the University of Massachusetts, Amherst and a Master of Arts degree in Economics from the University of Florida. Mr. Cleary has more than 38 years of professional experience in the nuclear industry, including more than 25 years with the NRC Staff. As a former NRC Staff manager, Mr. Cleary has extensive experience developing and applying NRC’s NEPA regulations and guidance, and, in particular,

²³⁷ *Hydro Res.*, CLI-01-04, 53 NRC at 53 (“[T]he hearing process itself ‘allows for additional and *more rigorous* public scrutiny of the FES than does the usual ‘circulation for comment.’”) (quoting *Limerick*, ALAB-819, 22 NRC at 707) (emphasis added)).

²³⁸ Clearwater Position Statement at 33 (CLE000002); Clearwater Rebuttal Position Statement at 32 (CLE000045).

²³⁹ Entergy Testimony at 1 (ENT000258).

²⁴⁰ Mr. Cleary’s professional qualifications are provided in his curriculum vitae (ENT000133) and summarized in his testimony. *See* Entergy Testimony at 1-4 (A1-4) (ENT000258).

evaluating environmental justice and severe accident impacts. He is familiar with the GEIS and Indian Point FSEIS assessments of such issues, as well as NRC's guidance on conducting environmental justice reviews for purposes of license renewal.

90. Mr. Riggs is a Geographic Information System ("GIS") Specialist for Enercon Services, Inc.²⁴¹ He holds a Master of Arts degree in Geography from the University of Oklahoma with an emphasis in Digital Geography (including GIS and Remote Sensing), and a Bachelor of Science degree in Biochemistry from the University of Oklahoma. Mr. Riggs is an experienced GIS specialist who has developed GISs and maps used to support several combined license and license renewal applications. In doing so, he has worked closely with local, state, and federal agencies to collect and develop the required data. Mr. Riggs helped prepare ER Section 2.6 (Regional Demography) and developed the demographic information needed to identify minority and low-income populations near Indian Point. Based on his experience, Mr. Riggs is very familiar with U.S. Census Bureau data and related literature.

91. Mr. Slobodien is Entergy's Director of Emergency Planning for fleet operations, including for Indian Point.²⁴² He holds a Bachelor of Science degree in Chemistry from Carnegie-Mellon University and a Master of Science degree in Radiation Health from the Graduate School of Public Health of the University of Pittsburgh. Mr. Slobodien has more than 40 years of professional experience in occupational and public radiation safety and health. As Entergy's Director of Emergency Planning, Mr. Slobodien directs and manages onsite and offsite emergency planning for Entergy's nuclear power reactor fleet. He is responsible for emergency

²⁴¹ Mr. Riggs's professional qualifications are provided in his curriculum vitae (ENT000008) and summarized in his testimony. *See* Entergy Testimony at 4-6 (A5-8) (ENT000258).

²⁴² Mr. Slobodien's professional qualifications are provided in his curriculum vitae (ENT000262) and summarized in his testimony. *See* Entergy Testimony at 6-8 (A9-A12) (ENT000258).

planning program design and content, facilities, infrastructure, equipment, training, drills, and exercises. His position also entails interfacing with numerous federal agencies including the Federal Emergency Management Agency (“FEMA”), NRC, U.S. Environmental Protection Agency (“EPA”), U.S. Department of Homeland Security; and supporting offsite response agencies at the local and state level for the states of New York, Massachusetts, Vermont, New Hampshire, Michigan, Arkansas, Louisiana, and Mississippi. Based on this experience, Mr. Slobodien has direct knowledge of Indian Point emergency plans, state and local emergency response plans, and applicable federal regulations and guidance pertaining to protecting the public in the unlikely event of an Indian Point radiological emergency.

92. Based on the foregoing, and the respective backgrounds and experience of Mr. Cleary, Mr. Riggs, and Mr. Slobodien, the Board finds that all three Entergy witnesses are qualified to testify as experts relative to the issues raised in CW-EC-3A.

2. NRC Staff’s Expert Witnesses

93. The NRC Staff presented a two-person witness panel consisting of Mr. Rikhoff and Ms. Milligan. Mr. Rikhoff and Ms. Milligan submitted written direct testimony and gave oral testimony at the evidentiary hearing.²⁴³

94. Mr. Rikhoff is a Senior Environmental Scientist and Socioeconomist in the NRC Division of License Renewal, NRR.²⁴⁴ He holds a Master of Science in International Economic Development and a Master of Regional Planning in Regional Environmental Planning from the University of Pennsylvania. Mr. Rikhoff has more than 23 years of experience working on NEPA environmental reviews, has worked at the NRC for over five years, and conducts land use,

²⁴³ NRC Staff Testimony at 1 (NRC000063).

²⁴⁴ Mr. Rikhoff’s professional qualifications are provided in his statement of professional qualifications (NRC000082) and summarized in his testimony. *See* NRC Staff Testimony at 1-3 (A1-4) (NRC000063).

socioeconomic, cultural resource, and environmental justice impact assessments in support of license renewal environmental reviews. Prior to working for the NRC, Mr. Rikhoff worked for over 17 years as a government contractor preparing NEPA documentation for the U.S. Department of Energy and Department of Defense. He specializes in preparing EISs and environmental assessments, cost analyses, socioeconomics and environmental justice impact analyses, comprehensive land-use and facility-development planning studies, regulatory review and permitting, and consultations with American Indian tribal representatives. Mr. Rikhoff has conducted environmental justice impact assessments for the past 11 years. Notably, Mr. Rikhoff was the principal reviewer of the environmental justice portions of Entergy's Indian Point ER and helped prepare FSEIS Section 4.4.6.

95. Ms. Milligan is a Senior Level Advisor for Emergency Preparedness and Response in the NRC's Office of Nuclear Security and Incident Response.²⁴⁵ She holds a Nuclear Pharmacy Certification from the Mercer Southern School of Pharmacy, a Pharmaceutical Sciences degree from Drake University, and a Bachelor of Science degree in Psychology/Biochemistry from the University of Michigan. Ms. Milligan has held her current position since November 2004 and has worked at the NRC for over 13 years. She is responsible for technical leadership in applying emergency preparedness and response activities and regulations at nuclear facilities. She also has extensive experience developing and documenting NRC Staff emergency preparedness positions and technical guidance. Ms. Milligan supports other NRC offices, including regional offices as well as other federal, state, and local government agencies. Ms. Milligan is an NRC point of contact for emergency preparedness in the international community and serves on international committees dedicated to emergency

²⁴⁵ Ms. Milligan's professional qualifications are provided in her statement of professional qualifications (NRC000064) and summarized in her testimony. *See* NRC Staff Testimony at 1-3 (A1-4) (NRC000063).

preparedness and response. Prior to assuming the position of Senior Level Advisor, Ms. Milligan was an NRC Senior Emergency Preparedness Specialist from 1998 until 2004. Before joining the NRC, Ms. Milligan worked on health physics and emergency preparedness issues for the nuclear power industry.

96. Based on the foregoing, and Mr. Rikhoff's and Ms. Milligan's respective backgrounds and experience, the Board finds that both NRC Staff witnesses are qualified to testify as experts relative to the issues raised in CW-EC-3A.

3. Clearwater's Witnesses

97. Clearwater presented testimony from nine witnesses: (1) Dr. Edelstein; (2) Ms. Greene; (3) Dr. Larsen; (4) Dr. Kanter; (5) Mr. Mair; (6) Mr. Filler; (7) Mr. Papa; (8) Mr. Simms; and (9) Ms. Guardado. All nine witnesses submitted written testimony for this contention and gave oral testimony at the evidentiary hearing.²⁴⁶

a. Dr. Michael Edelstein

98. Dr. Edelstein is an environmental psychology professor at Ramapo College of New Jersey.²⁴⁷ He holds a Doctorate degree in Social Psychology from the State University of New York at Buffalo and a Bachelor of Science degree in Psychology from the University of Pittsburgh. Dr. Edelstein has over 30 years experience in the environmental psychology field and has studied literature concerning the psychological effects of environmental disasters, including the Bhopal gas leak tragedy, the Chernobyl nuclear accident, and Hurricane Katrina. With regard to Indian Point, Dr. Edelstein visited Sing Sing, spoke with some of the prisoners,²⁴⁸

²⁴⁶ Unlike Clearwater's eight other witnesses, Dr. Kanter did not submit direct testimony. Only Ms. Greene, Dr. Edelstein, and Dr. Kanter submitted rebuttal testimony. *See* Edelstein Rebuttal Testimony (CLE000047); Greene Rebuttal Testimony (CLE000046); Kanter Rebuttal Testimony (CLE000048).

²⁴⁷ Dr. Edelstein's background and professional qualifications are provided in his curriculum vitae (CLE000011) and summarized in his testimony. *See* Edelstein Direct Testimony at 1 (A2) (CLE000003).

²⁴⁸ Edelstein Direct Testimony at 1 (CLE000003).

and authored two reports²⁴⁹ based on that experience, which are incorporated into his testimony.²⁵⁰ Dr. Edelstein stated that his “specialty is psycho-social impact assessment of environmental disaster and change” and analysis of “psychological and mental harms.”²⁵¹ Dr. Edelstein’s resume, however, does not indicate that he has emergency planning expertise.²⁵² During the hearing, however, Dr. Edelstein offered opinions on severe accidents, radiological health impacts, and emergency planning issues—all far afield from his specialty in psycho-social impact assessment.²⁵³

b. Ms. Manna Jo Greene

99. Ms. Greene is Clearwater’s Environmental Director.²⁵⁴ She has eleven years of experience at Clearwater, and more than 20 years experience with environmental organizations. Ms. Greene was a Registered Nurse from 1976 to 2001, and was certified in Critical Care for more than 10 years. In this proceeding, she primarily testified about “interviews” Clearwater conducted at various facilities near Indian Point to assess their level of emergency preparedness

²⁴⁹ Michael Edelstein, Environmental Justice Impacts from the Proposed Relicensing of the Indian Point Nuclear Power Complex: a Focus on Sing Sing Prison (Oct. 5, 2011) Parts 1, 2, and 3 (“Edelstein Report”) (CLE00012A-C); Michael Edelstein, Rebuttal to Respondents to Testimony on the Environmental Justice Contention Report (“Edelstein Rebuttal Report”) (CLE000058).

²⁵⁰ Edelstein Direct Testimony at 1-2 (CLE000003); Edelstein Rebuttal Testimony at 1 (CLE000047).

²⁵¹ Edelstein Report Part 1 at 2 (CLE00012A).

²⁵² See *Curriculum Vitae* of Michael Edelstein (CLE000011).

²⁵³ Dr. Edelstein opined about the effectiveness of radiological emergency plans and associated protective actions at preventing direct physical health effects from radiation exposure in the event of a severe accident. See Edelstein Direct Testimony at 3-4 (CLE000003) (stating that prison evacuations are “far more complex,” sheltering “impacts are likely to be higher due to inability to seal the building,” and radiation-related impacts would be significantly greater); see also Edelstein Report Part 2 at 20-23, 28-31, 32-33, 36-38 (CLE00012B); Edelstein Report Part 3 at 39-44 (CLE00012C). He also opined on the likelihood and consequences of severe accidents. See Edelstein Direct Testimony at 4 (CLE000003) (discussing the extent of radiological releases from the Fukushima accident); see also Edelstein Report Part 1 at 16-18 (offering testimony on meteorological conditions, radiological plume dispersion, and radiological risk) (CLE00012A); *id.* at 18-19 (offering testimony on probability and consequences of severe accidents, including seismic risk); Edelstein Report Part 2 at 37 (CLE00012B) (offering testimony on wind conditions and severity of radioactive release).

²⁵⁴ At hearing, Ms. Greene withdrew from representing Clearwater in order to testify on its behalf. Oct. 23, 2012 Tr. at 2729:10-18. Ms. Greene’s professional background is provided in her resume (CLE000024) and summarized in her testimony. See Greene Direct Testimony at 1 (A2) (CLE000010).

and ability to evacuate. Clearwater did not, however, offer testimony or evidence demonstrating that Ms. Greene has the requisite expertise in designing or conducting interviews, or in subsequently extrapolating data from interviews or interpreting interview results, particularly as they relate to emergency planning activities. Further, Ms. Greene's resume does not indicate that she has emergency planning expertise.

c. Dr. Erik A. Larsen

100. Dr. Larsen is an emergency physician and Associate Medical Director of White Plains Hospital Center Emergency Department in White Plains, New York, as well as an Assistant Professor of Emergency Medicine at New York Medical College.²⁵⁵ He holds a Medical Degree from the Medical College of Ohio and a Bachelor of Science degree from Antioch College. Dr. Larsen is also the Associate Medical Director of LifeNet-NY and STAT flights; chief medical officer of the National Disaster Medical System ("NDMS") Region 2 (New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands); and has been medical director of multiple emergency medical service agencies near Indian Point. Before his current position, Dr. Larsen was the Director of Westchester County Department of Emergency Services in Valhalla, New York. Dr. Larsen also has extensive experience with hurricane and earthquake disaster recovery.²⁵⁶ In this proceeding, Dr. Larsen's testimony focused on potential severe accident impacts on hospital patient conditions and his experience with hurricane victim conditions, issues that are, at best, only tangentially connected to CW-EC-3A.²⁵⁷

²⁵⁵ Dr. Larsen's professional qualifications are provided in his curriculum vitae (CLE000020) and discussed in his testimony. *See* Larsen Direct Testimony at 1-2 (A3-4) (CLE000005).

²⁵⁶ Dr. Larsen was the Medical Director of the New Orleans International Airport during Hurricane Katrina, Medical Director of the NDMS Rapid Needs Assessment Team during Hurricane Wilma, and traveled with the New York City Medics Response Team during the 2006 Pakistan Earthquake. *See* Curriculum Vitae of Dr. Erik Larsen (CLE000020).

²⁵⁷ *See* Larsen Direct Testimony at 2-3 (CLE000005).

d. Dr. Andrew Kanter

101. Dr. Kanter is an assistant professor of clinical Biomedical Informatics and Epidemiology at the Earth Institute, Columbia University, and President of the Board of Directors of Physicians for Social Responsibility.²⁵⁸ Dr. Kanter holds a Bachelor of Science degree in Psychobiology from the University of California, Los Angeles; a Doctor of Medicine degree from Harvard Medical School; and a Master of Public Health degree in Tropical Public Health from the Harvard School of Public Health. Dr. Kanter has researched and presented on medical issues associated with nuclear weapon and nuclear power plant accident simulations. He has also studied radiation and nuclear fuel cycle impacts. At the 2011 American Public Health Association national meeting, Dr. Kanter presented on the challenges of evacuating populations around nuclear power plants. In this proceeding, Dr. Kanter's rebuttal testimony focused on his concerns about the adequacy of existing Indian Point emergency plans.²⁵⁹

e. Mr. Aaron Mair

102. Mr. Mair is a Program Research Specialist in the Public Health Information Group of the New York State Department of Health and has experience in Geographical Information Systems, environmental justice, and civil rights advocacy.²⁶⁰ Mr. Mair was a long-time resident of Peekskill, New York, and his testimony focused on Peekskill's demographics

²⁵⁸ Dr. Kanter's professional qualifications are provided in his curriculum vitae (CLE000049) and discussed in his rebuttal testimony. *See* Kanter Rebuttal Testimony at 1-2 (A1-3) (CLE000048).

²⁵⁹ For example, Dr. Kanter asserts that "evacuation plans must take into account the need to relocate all affected populations within a contaminated zone for the long term," that "[c]oordinating the relocation of tens of thousands of patients in a very short period of time, including the need for transportation, security, portable medical devices, etc., would be impossible," and that "procedures for allocating scare [sic] resources in the case of an incident such as an accident at Indian Point are not only unproven, but are unlikely to perform as expected during an actual accident." *See* Kanter Rebuttal Testimony at 3-5 (A5) (CLE000048).

²⁶⁰ Mr. Mair's professional qualifications are provided in his curriculum vitae (CLE000021) and summarized in his testimony. *See* Mair Direct Testimony at 1-3 (A1-4) (CLE000007).

and potential evacuation difficulties due to terrain and low automobile ownership levels.²⁶¹

Mr. Mair's resume does not indicate that he has emergency planning expertise.²⁶²

f. Mr. Stephen Filler

103. Mr. Filler is an attorney and Board Member of Hudson River Sloop Clearwater, Inc.²⁶³ In this proceeding, Mr. Filler cited several emergency planning documents, which appear to be the basis for his written testimony.²⁶⁴ Mr. Filler's testimony also focused on concerns about the adequacy of local emergency plans.²⁶⁵ Clearwater, however, did not offer evidence showing that Mr. Filler has emergency planning expertise.

g. Mr. Anthony Papa

104. Mr. Papa is the manager of media relations at the Drug Policy Alliance, an artist, actor, and author.²⁶⁶ Mr. Papa served 12 years as an inmate at Sing Sing due to a non-violent drug crime and received executive clemency from Governor Pataki in 1997.²⁶⁷ Mr. Papa has since advocated for drug reform. In this proceeding, most of Mr. Papa's written testimony expressed concerns about the adequacy and effectiveness of Sing Sing's emergency plans.²⁶⁸

²⁶¹ See Mair Direct Testimony at 6-11 (A6-16) (CLE000007).

²⁶² See Curriculum Vitae of Aaron Mair (CLE000021).

²⁶³ At hearing, Mr. Filler, who until then had represented Clearwater in this proceeding, withdrew from representing Clearwater in order to testify on behalf of Clearwater. Oct. 23, 2012 Tr. at 2728:10-18 (Webster) (affirming withdrawals from Ms. Greene, Mr. Filler, and Ms. Raimundi). Mr. Filler's background is discussed in a 2011 Declaration. See Declaration of Stephen Filler in Support of Hudson River Sloop Clearwater, Inc.'s Combined Reply to NRC Staff and Entergy's Answer to Amended Environmental Justice Contention (EC3) (Mar. 21, 2011), available at ADAMS Accession No. ML110980606.

²⁶⁴ Filler Direct Testimony at 1-3 (A2-6) (CLE000009) (discussing radiological emergency plans prepared by Westchester County, Rockland County, and New York State).

²⁶⁵ *Id.* at 1-3 (A2-5) (CLE000009) (expressing concerns about sheltering-in-place, and about evacuation of populations without private vehicles, the medically infirm, immobile, and disabled).

²⁶⁶ Mr. Papa's testimony further discusses his background. See Papa Direct Testimony at 1-3 (A1-8) (CLE000004).

²⁶⁷ Oct. 23, 2012 Tr. at 2803:17-19 (Papa).

²⁶⁸ For example, Mr. Papa asserts that "it would be extremely difficult to evacuate Sing Sing in a reasonable amount of time," and that Sing Sing is not "a very good building for sheltering in place." Papa Direct Testimony at 3 (A10), 4 (A13) (CLE000004).

Clearwater, however, did not offer evidence showing that Mr. Papa has emergency planning expertise.²⁶⁹

h. Mr. John Simms

105. Mr. Simms is an 88 year-old retiree who lives at Bethel Springvale Inn, an assisted-living facility located near Indian Point.²⁷⁰ In this proceeding, Mr. Simms’s written testimony focused on his belief that it would be difficult to evacuate Bethel Springvale Inn due to the age and health of its residents.²⁷¹ Clearwater, however, did not offer evidence showing that Mr. Simms has emergency planning expertise.²⁷²

i. Ms. Dolores Guardado

106. Ms. Guardado is a resident of a predominantly Hispanic neighborhood in Peekskill, New York, and an active member of its Hispanic community.²⁷³ Ms. Guardado also has a child who attends school in Peekskill. In this proceeding, Ms. Guardado’s written testimony addressed alleged challenges in evacuating non-English speaking members of the Hispanic community in the event of an emergency.²⁷⁴ Clearwater, however, did not offer evidence showing that Ms. Guardado has emergency planning expertise.²⁷⁵

* * * *

107. Based on the foregoing, the Board has concerns about whether Clearwater’s witnesses have the necessary qualifications and personal knowledge to testify concerning

²⁶⁹ See generally Papa Direct Testimony at 1-5 (CLE000004).

²⁷⁰ Simms Testimony at 1 (A1) (CLE000006).

²⁷¹ See, e.g., *id.* at 2 (A6) (indicating that residents with poor hearing may have difficulty evacuating).

²⁷² See generally *id.*

²⁷³ Guardado Direct Testimony at 1-3 (A1-8) (CLE000008).

²⁷⁴ See, e.g., *id.* at 4 (A14) (CLE000008) (“For example, in case of an emergency we (Spanish-speaking individuals) will not have the ability to communicate effectively in English.”).

²⁷⁵ See generally *id.* at 1-7.

disparate severe accident environmental impacts and emergency planning activities. To ensure a full and complete record, however, we allowed each of Clearwater's witnesses to fully testify on those and other issues. It now appears that substantial portions of that testimony might now be excluded as going beyond a particular witness' identified scope of direct knowledge and/or technical expertise. Nonetheless, given that all of the testimony is now already in the record, the Board instead has simply chosen to admit all such testimony but to then give all evidence its appropriate weight (which may be no weight at all if the testimony is not properly supported or irrelevant) in resolving this contention's merits.

B. The FSEIS Identification of Environmental Justice Populations Complies Fully with NEPA and Applicable NRC Regulations

108. An environmental justice review entails two major steps: (1) identifying minority and low-income populations that the proposed action could potentially impact; and (2) disclosing any disproportionately high and adverse impacts to these particular populations that, due to the population's unique characteristics, may differ from the impacts to the general population.²⁷⁶ Thus, in accordance with NRC environmental justice precedent and guidance, the first issue the Board must resolve is whether the FSEIS properly identifies minority and low-income populations who could be potentially impacted by the proposed IP2 and IP3 renewal.

109. The Commission's Environmental Justice Policy endorses NRC Staff guidance in LIC-203, the latter of which outlines the detailed procedural steps for the NRC Staff to identify relevant (*i.e.*, relatively high density) minority populations and low-income populations.²⁷⁷ In

²⁷⁶ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260). *See also* Oct. 23, 2012 Tr. at 2797 (Judge McDade, Rikhoff) (discussing environmental justice review process); Entergy Testimony at 20 (A27) (ENT000258); NRC Staff Testimony at 11-12 (A11) (NRC000063); Clearwater Rebuttal Position Statement at 8 (CLE000045) (indicating that Clearwater agrees that environmental justice review entails "two main steps.").

²⁷⁷ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,041 (ENT000260) (endorsing LIC-203, Rev. 1, at D-8 (ENT000261)). *See also* Entergy Testimony at 21-22 (A28) (ENT000258); NRC Staff Testimony at

particular, LIC-203 sets forth the following steps: (1) determine the geographic area for analysis (*e.g.*, the 50-mile radius from the plant); (2) establish the relevant overall minority and low-income composition; and (3) using the overall minority and low-income composition as a comparative baseline, determine the location of those sub-areas where minority or low-income populations are disproportionately located within the environmental impact area.²⁷⁸

110. Consistent with Commission precedent, LIC-203 defines “minority” individuals as members of the following population groups: Hispanic or Latino; American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; or two or more of these groups.²⁷⁹ LIC-203 defines “low-income” using the U.S. Census Bureau’s annual statistical poverty thresholds.²⁸⁰

111. To determine whether the environmental impact area contains any environmental justice minority or low-income populations requiring analysis, NRC guidance specifically endorses using census Block Group data.²⁸¹ NRC guidance further indicates that an environmental justice population is present where a census Block Group contains a minority or low-income population that: (1) exceeds 50 percent; or (2) significantly exceeds (*e.g.*, by at least

11 (A10) (NRC000063). Although the Commission’s Environmental Justice Policy Statement endorses LIC-203, Rev. 1 (ENT000261), the Board’s Decision focuses on the most recent version of that guidance, LIC-203, Rev. 2 (ENT000264).

²⁷⁸ LIC-203, Rev. 2, App. C, at C-4 to C-6 (ENT000264); *see also* Entergy Testimony at 21 (A28) (ENT000258); NRC Staff Testimony at 11-13 (A11) (NRC000063).

²⁷⁹ LIC-203, Rev. 2, App. C, at C-5 (ENT000264); *see also* NRC Staff Testimony at 13 (A12) (NRC000063); Entergy Testimony at 22 (ENT000258).

²⁸⁰ LIC-203, Rev. 2, App. C, at C-5 (ENT000264); *see also* NRC Staff Testimony at 13 (A12) (NRC000063); Entergy Testimony at 22 (A28) (ENT000258); Oct. 23, 2012 Tr. at 2738:1-10 (Rikhoff).

²⁸¹ LIC-203, Rev. 2, App. C, at C-5 to C-6 (ENT000264); *see also* NRC Staff Testimony at 18-19 (A23) (NRC000063); Entergy Testimony at 23-24 (A30) (ENT000258). A Block Group is a relatively small U.S. Census Bureau geographical unit containing between 600 and 3000 people. Entergy Testimony at 22 (A29) (ENT000258). A Block Group combines several census Blocks, which are the smallest geographical unit the U.S. Census Bureau uses and typically are defined by roads and other physical geography. *Id.*

20 percentage points) the minority or low-income population in the entire environmental impact area.²⁸²

112. Mr. Rikhoff testified that the NRC Staff applied the guidance in the Commission's Environmental Justice Policy Statement and LIC-203 in preparing the FSEIS.²⁸³ Consistent with this guidance, the FSEIS environmental justice evaluation used 2000 census Block Group population data to identify environmental justice populations in the 50-mile area surrounding IP2 and IP3.²⁸⁴ The FSEIS identifies a census Block Group as containing an environmental justice population if more than: (1) 50 percent of the Block Group's population was minority; or (2) 14.5 percent of the Block Group's population was low-income.²⁸⁵

113. The NRC Staff's use of the 50 percent minority criterion is appropriate in this case because adding 20 percent to 48.7 percent (the percentage of minorities residing within the 50-mile area) would have resulted in a 68.7 percent minority criterion that is greater than the 50 percent criterion the FSEIS uses. Logically, applying this higher criterion would have identified fewer—not more—minority populations. Therefore, the FSEIS identification of minority populations is reasonable and conservative because it errs on the side of identifying more minority populations than necessary.

114. The NRC Staff's use of the 14.5 percent low-income criterion appears to be very conservative when compared to the criteria suggested by NRC guidance (*i.e.*, 34.5 percent, or

²⁸² LIC-203, Rev. 2, App. C, at C-6 (ENT000264); *see also* NRC Staff Testimony at 13 (A12) (NRC000063); Entergy Testimony at 22 (A28) (ENT000258).

²⁸³ Oct. 23, 2012 Tr. at 2742:25 (Rikhoff).

²⁸⁴ *See* FSEIS at 4-53 (NYS00133B). *See also* Oct. 23, 2012 Tr. at 2739:8-9 (Rikhoff) (affirming that the relevant FSEIS analysis encompassed a 50-mile radius of Indian Point).

²⁸⁵ *See* FSEIS at 4-50, 4-53 (NYS00133B). *See also* Oct. 23, 2012 Tr. at 2746:7-15 (Rikhoff) (affirming that the NRC considered a block group to contain a minority population if the population exceeded 50 percent minorities).

14.5 percent plus 20 percent).²⁸⁶ Therefore, the FSEIS identification of low-income populations is reasonable and conservative because it errs on the side of identifying more low-income populations than necessary.

115. Using these Commission-approved criteria, FSEIS Figures 4-5 and 4-6 identify the location of environmental justice minority and low-income census Block Groups within the 50-mile potential environmental impact area.²⁸⁷ Thus, consistent with NRC guidance and well within NEPA's rule of reason, the FSEIS correctly identifies environmental justice populations by focusing on census Block Groups containing the requisite minority and low-income populations.²⁸⁸

116. Clearwater does not dispute that the NRC Staff followed the steps outlined in the applicable guidance and identified all census Block Groups containing minority and low-income populations that exceeded the criteria in the Commission's Environmental Justice Policy Statement and LIC-203.²⁸⁹ The Board therefore finds that the FSEIS's identification of environmental justice populations is adequate, reasonable, and consistent with the Commission's Environmental Justice Policy Statement and NRC Staff guidance in LIC-203.

117. In turn, any challenges to the Staff's environmental justice review, which in this case is consistent with Commission-endorsed guidance, must be specifically and substantially

²⁸⁶ See Entergy Testimony at 39-40 (ENT000258).

²⁸⁷ As Entergy's and NRC Staff's witnesses testified, the ER's approach for identifying minority and low-income populations located within the 50-mile potential environmental impact area was generally consistent with the FSEIS's approach. NRC Staff Testimony at 8-9, 20 (NRC000063); Entergy Testimony at 39-40 (ENT000258). Consistent with Commission precedent, however, the Board treats CW-EC-3A as a challenge to the FSEIS and thus focuses its discussion on the FSEIS and related evidence. See *LES*, CLI-98-3, 47 NRC at 84 (indicating that the Board appropriately treated a NEPA contention as a challenge to the FEIS even though most of the environmental contentions were filed as challenges to the applicant's ER).

²⁸⁸ FSEIS at 4-52, 4-55 (NYS00133B).

²⁸⁹ See generally Clearwater Position Statement (CLE000002) and Direct Testimony (Exhs. CLE000003 through CLE000010); Clearwater Rebuttal Position Statement (CLE000045) and Rebuttal Testimony (Exhs. CLE000046 through CLE000048); Oct. 23, 2012 Tr.

supported in order to overcome the special weight accorded to such documents.²⁹⁰ As discussed in the remainder of this section, Clearwater has not met this burden in seeking to challenge the FSEIS's identification of environmental justice populations.

1. Census Block Group Data

118. Clearwater asserted that the FSEIS should have used Block-level data instead of the higher-level Block Group data to identify appropriate minority and low-income populations.²⁹¹ Clearwater relied on Dr. Edelstein's expert report to support this claim.

Although Dr. Edelstein conceded that Block Group data may be appropriate for the low-income portion of an environmental justice analysis,²⁹² he claimed that using Block Group data is inappropriate for the minority portion of the analysis because using Block Group data "risks washing out (*i.e.*, diluting) the presence of minority [environmental justice] populations."²⁹³

119. As noted above, the Commission has endorsed guidance that recommends using Block Group data. In doing so, the Commission, in its Environmental Justice Policy Statement, considered endorsing the use of Block data, but found that using Block data would be impracticable because the U.S. Census Bureau does not release income data at the Block-level

²⁹⁰ See *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC ___, slip op. at 16 n.78 (Mar. 8, 2012); *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-05-15, 61 NRC 365, 375 n.26 (2005) ("We recognize, of course, that guidance documents do not have the force and effect of law. Nonetheless, guidance is at least implicitly endorsed by the Commission and therefore is entitled to correspondingly special weight") (citations and internal quotation marks omitted); *Private Fuel Storage, L.L.C.* (Indep. Spent Fuel Storage Installation), CLI-01-22, 54 NRC 255, 264 (2001) ("Where the NRC develops a guidance document to assist in compliance with applicable regulations, it is entitled to special weight"), *petition for review held in abeyance, Devia v. NRC*, 492 F.3d 421 (D.C. Cir. 2007).

²⁹¹ Clearwater Position Statement at 20 (CLE000002) ("[I]t appears that the NRC Staff has failed to properly identify the [environmental justice] populations on the census block level, as required by Commission guidance.").

²⁹² Oct. 23, 2012 Tr. at 2788:20-24 (Edelstein) ("I think the smaller scale had no income data.").

²⁹³ Edelstein Rebuttal Report at 4 (CLE000058).

due to privacy concerns.²⁹⁴ In turn, as Mr. Rikhoff and Mr. Riggs both testified, NRC guidance—endorsing the use of Block Groups rather than Blocks—is well-founded because performing a complete environmental justice evaluation (which must include low-income populations) from published census data would not be possible using only census Block data.²⁹⁵ The FSEIS itself addresses this issue in response to public comments on the Indian Point DSEIS, stating that “Census block group data was chosen because poverty and income information is not available from Census at the block level.”²⁹⁶

120. The NRC Staff’s approach is consistent with CEQ guidance on identifying minority populations for environmental justice NEPA evaluations, again a particularly important point given that CEQ is considered the lead federal agency in interpreting and providing agency guidance as to NEPA’s requirements.²⁹⁷ The CEQ’s environmental justice guidance states that “[t]he selection of the appropriate unit of geographic analysis may be a governing body’s jurisdiction, a neighborhood, *census tract*, or other similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population.”²⁹⁸ Thus, the CEQ environmental justice guidance endorses using “tracts,” which are even larger units within the census data than the Block Groups that the NRC Staff used.²⁹⁹

²⁹⁴ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (ENT000260); *see also* Oct. 23, 2012 Tr. at 2748:15 to 2749:4 (Rikhoff) (affirming that census block-level information does not contain individual income data).

²⁹⁵ NRC Staff Testimony at 18-19 (NRC000063); Entergy Testimony at 23-24 (ENT000258). *See also* Oct. 23, 2012 Tr. at 2746:24 to 2747:3, 2748:21-2749:4 (Rikhoff) (confirming that census block data do not contain necessary income information).

²⁹⁶ FSEIS at A-115 (NYS00133D).

²⁹⁷ *See Warm Springs Dam Task Force v. Gribble*, 417 U. S. 1301, 1309-10 (1974). *See also* Oct. 23, 2012 Tr. at 2743:3-6 (Rikhoff) (indicating that CEQ provides guidance to federal agencies conducting environmental justice reviews).

²⁹⁸ CEQ Environmental Justice Guidance at 26 (ENT000266) (emphasis added).

²⁹⁹ *See* Entergy Testimony at 22-25 (ENT000258); Oct. 23, 2012 Tr. at 2896:14-15 (Rikhoff).

121. In addition, Clearwater itself offered into evidence an e-mail from the New York State Department of Environmental Conservation (“NYSDEC”) that indicates that NYSDEC uses Block Group data when implementing state environmental laws and environmental justice policies.³⁰⁰ That document explains that NYSDEC uses “a data set of 2000 *U.S. Census block groups* with Census demographic data for purposes of implementing NYSDEC Commissioner Policy 29 on Environmental Justice and Permitting.”³⁰¹ Therefore, Clearwater’s own evidence is contrary to its advocated use of census Blocks.

122. Significantly, neither Dr. Edelstein nor any other Clearwater witness identified any minority or low-income population that the NRC Staff omitted from the FSEIS environmental justice analysis because it used census Block Group data, rather than census Block data, to identify environmental justice populations.³⁰² Dr. Edelstein’s testimony on this issue is ultimately a speculative claim that the NRC should use Block data to identify minority populations because there is a *chance* that using Block Group data “risks washing out (*i.e.*, diluting) the presence of minority [environmental justice] populations.”³⁰³ This unsupported allegation is insufficient to overcome the special weight accorded to NRC guidance’s endorsement of Block Group data and it fails to recognize that the agency is allowed to draw reasonable lines on how to undertake its analysis to allow efficiency and prevent overwhelming analytical burdens.³⁰⁴

³⁰⁰ Email from J. Matthews, NYSDEC, to M. Greene, Clearwater, “Potential EJ Areas 10 and 50 miles from Indian Point” at 1 (Apr. 15, 2011) (“IPEC Environmental Justice Mapping Method Email”) (CLE000029).

³⁰¹ *Id.* (emphasis added).

³⁰² See Oct. 23, 2012 Tr. at 2792:11-2793:11 (Edelstein) (acknowledging that the NRC Staff’s assessment encompassed all environmental justice communities in the area).

³⁰³ Edelstein Rebuttal Report at 4 (CLE000058). See also Oct. 23, 2012 Tr. at 2791:1-6 (Edelstein).

³⁰⁴ *Kleppe*, 429 U.S. at 1311; see also *Pub. Citizen*, 541 U.S. at 767-69 (rule of reason is inherent in NEPA and its implementing regulations).

123. In contrast to Dr. Edelstein’s speculation, Mr. Rikhoff made clear that “Block Group data is just as accurate” as Block data because Block Group data “include[] the Block-level data.”³⁰⁵ Because NRC, CEQ, and NYSDEC guidance all endorse using census Block Groups, and because Clearwater has not substantiated its assertion that the NRC Staff should have instead used census Blocks, the Board finds no deficiency in the FSEIS identification of minority and low-income populations. Thus, based on the evidence presented, the Board finds that the NRC Staff’s use of Block Group data is reasonable and sufficient to satisfy NEPA.

2. Non-Environmental Justice Populations

124. Clearwater argued that the FSEIS environmental justice evaluation too-narrowly focuses on only minority and low-income populations, and should also consider impacts to the disabled, the elderly, and those confined to institutions.³⁰⁶ To support this argument, Dr. Edelstein and Ms. Greene referenced a presentation by the NRC Staff’s David B. Matthews, entitled “Environmental Justice and the NRC: A Progression to Excellence,” and claimed that, in another setting, the NRC Staff defined environmental justice populations to include “[a]nyone without full access to, or protection from, the decision making process.”³⁰⁷ In essence, Clearwater requests that this Board expand NRC’s environmental justice evaluation beyond minority and low-income populations, in a manner directly contrary to NEPA and NRC’s formal environmental justice guidance. We reject Clearwater’s request.

³⁰⁵ Oct. 23, 2012 Tr. at 2896:17-18 (Rikhoff). *See also* Entergy Testimony at 23 (graphic of “U.S. Census Geographic Hierarchy”).

³⁰⁶ Clearwater Rebuttal Position Statement at 11 (CLE000045). *See also* Oct. 24, 2012 Tr. at 2813:4-6 (Larsen) (indicating concern for disabled and special needs populations during disaster response); *id.* at 2819:24-25, 2820:14-20, 2824:12-19 (Mair) (arguing that “environmental justice” should consider more than just race and income).

³⁰⁷ Greene Rebuttal Testimony at 2 (A3) (CLE000046); Edelstein Rebuttal Testimony at 3-4 (CLE000047); *see also* David B. Matthews, Environmental Justice and the NRC: A Progression to Excellence (April 22, 2012) (CLE000051); Oct. 24, 2012 Tr. at 2789:15-2790:23 (Edelstein).

125. Clearwater erroneously implies that Mr. Matthews's presentation alters existing NRC environmental justice guidance. As Mr. Rickhoff testified, that presentation is *not* NRC guidance, but is merely a presentation that a single member of the NRC Staff gave at a convention.³⁰⁸ To the degree it is at all relevant to this proceeding, the presentation's content is contrary to current, established Commission precedent and guidance, and Clearwater provides no indication that the NRC, through this presentation by a single NRC Staff member, has changed the agency's position on this issue. The Board notes that it does not believe the presentation itself is relevant to this proceeding, as the presentation cited by Dr. Edelstein and Ms. Greene addresses neither license renewal proceedings nor Indian Point, but rather focuses on an environmental justice analysis in a single, new reactor proceeding.³⁰⁹ For these reasons, the Board finds that Clearwater's argument related to this single NRC Staff member's presentation is irrelevant to CW-EC-3A's resolution, and, even if relevant, does not demonstrate that the FSEIS is deficient for purposes of Indian Point license renewal.

126. Commission precedent and policy clearly establish that an environmental justice evaluation's purpose is to consider disproportionately high and adverse impacts on *low-income* and *minority* populations.³¹⁰ No categories other than minority and low-income populations are covered by the Commission's precedent or NRC guidance. For example, NRC guidance does not include all elderly people as an environmental justice population regardless of minority or

³⁰⁸ Oct. 23, 2012 Tr. at 2897:20-21 (Rickhoff).

³⁰⁹ See David B. Matthews, Environmental Justice and the NRC: A Progression to Excellence at 5 (CLE000051); Oct. 23, 2012 Tr. at 2908:10-20 (Rickhoff) (indicating that new reactor and license renewal proceedings consider different impacts).

³¹⁰ See *Hydro Res.*, CLI-01-4, 53 NRC at 64; *LES*, CLI-98-3, 47 NRC at 100; NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,040 (ENT000260); LIC-203, Rev. 2, App. C, at C-3 (ENT000264).

low-income status.³¹¹ The reasons for this are self-evident—there is no necessary correlation between age and economic or socioeconomic disadvantage correlating to the kinds of challenges certain races or income groups have historically confronted.³¹² Neither does NRC guidance include all people in prisons and nursing homes as environmental justice populations regardless of minority or low-income status.³¹³ Accordingly, we find that the NRC Staff’s environmental justice analysis appropriately focused on minority and low-income populations.

3. Environmental Justice Population Subgroups

127. Clearwater also argued that the identification of environmental justice populations in the FSEIS is deficient because it does not consider factors unique to those populations.³¹⁴ According to Dr. Edelstein, reliance on census data fails to account for factors that are unique to environmental justice “subgroups,” such as those that lack private transportation, reside in institutions, are elderly, or are infirm.³¹⁵ As discussed further below, and based on this proceeding’s full record, the Board concludes that the FSEIS’s identification of environmental justice populations is reasonable and sufficient under NEPA.

128. As an initial matter, Mr. Riggs and Mr. Rikhoff both testified that census Block Group data include all people located within that Block Group’s geographic bounds, including

³¹¹ Oct. 23, 2012 Tr. at 2744:1-4 (Rikhoff) (stating that the NRC does not consider the elderly, prisoners, or nursing home inhabitants as part of environmental justice populations because Executive Order 12898 does not identify these groups).

³¹² *See, e.g., id.* at 2852:2-3 (Simms) (admitting that the population of his assisted living facility is “not what you would call low-income.”).

³¹³ Oct. 23, 2012 Tr. at 2744:25 (Rikhoff) (affirming that individuals would be considered part of an environmental justice population based on their minority and low-income status, not on other defining characteristics).

³¹⁴ Clearwater Rebuttal Position Statement at 11 (CLE000045). *See also* Oct. 23, 2012 Tr. at 2793:11-19 (Edelstein) (arguing that the purpose of a site-specific study is to examine “peculiar, particular or site-specific issues”).

³¹⁵ Oct. 23, 2012 Tr. at 2790-91 (Edelstein).

both institutional and non-institutional populations.³¹⁶ As these witnesses explained, Block Group data, through the Group Quarter classification, account for all environmental justice populations, whether a subgroup or not.³¹⁷ This testimony was not contradicted by any of Clearwater’s witnesses.

129. The Commission’s Environmental Justice Policy Statement provides that environmental justice “is a tool, within the normal NEPA context, to identify *communities* that might otherwise be overlooked and identify impacts due to their *uniqueness* as part of the NRC’s NEPA review process.”³¹⁸ However, Commission precedent also clarifies that an environmental justice evaluation does not involve looking at “vaguely defined, shifting ‘subgroups’” within low-income and minority communities “because the potential universe of aggrieved individuals and groups is . . . ‘virtually infinite, limited only by one’s imagination.’”³¹⁹

130. Clearwater’s insistence on separate, detailed, subgroup analysis is contrary to this precedent for two reasons. First, to the degree, for example, that “transportation dependency” alone renders a population subgroup a separate environmental justice community, Clearwater seeks a radical expansion of environmental justice review by expanding the relevant groups beyond those identified on the basis of race and/or income. The flaw in Clearwater’s argument is demonstrated through a simple factual example—many Manhattan residents rely on public transportation, but are also financially well-off and are hardly the appropriate targets for an environmental justice analysis.

³¹⁶ Entergy Testimony at 40-41 (ENT000258); NRC Staff Testimony at 21-22 (NRC000063). *See also* Oct. 23, 2012 Tr. at 2896:17-18 (Rikhoff) (“Block group data is just as accurate. It includes the block-level data.”).

³¹⁷ FSEIS at A-119 (NYS00133D). *See also* Oct. 23, 2012 Tr. at 2905:3-11 (Riggs), 2911:11-18 (Rikhoff) (explaining data included in Group Quarter classification).

³¹⁸ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260) (emphasis added); *see also* Entergy Testimony at 20 (ENT000258).

³¹⁹ *PFS*, CLI-02-20, 56 NRC at 155-56.

131. Second, to the degree Clearwater faults the FSEIS for not separately identifying transportation-dependent populations (or other subgroups) that are already identified as environmental justice populations based on the NRC Staff’s Block Group evaluation, Clearwater again improperly seeks to expand the required analysis, albeit for a different reason.³²⁰ The Board finds that the NRC is not required to identify or consider unique aspects of these population subgroups as Clearwater suggests. NEPA does not, for example, require that the NRC break down already-identified environmental justice communities to further identify those subgroups without private transportation, those residing in hospitals, and those confined to prisons.

132. Clearwater erroneously cites the Commission’s *LES* decision to support its allegation that the NRC must consider impacts to environmental justice subgroups.³²¹ According to Clearwater, *LES* demonstrates that an environmental justice evaluation must identify factors unique to particular subgroups, such as low car-ownership rates.³²² In its *Private Fuel Storage* decision, however, the Commission clarified that *LES* does not hold that environmental justice analyses must divide populations into subgroups.³²³ As the Commission explained, *LES* “did not call for breaking up the community into ‘subgroups’ of car-drivers and pedestrians” but rather dealt with two distinct environmental justice communities that would face potential adverse impacts.³²⁴ Thus, *LES* lends no support to Clearwater’s argument that the NRC must analyze

³²⁰ See, e.g., Greene Rebuttal Testimony at 1-2 (A3) (CLE000046); Kanter Rebuttal Testimony at 3-5 (A5), 9 (A11) (CLE000048); Edelman Rebuttal Report at 22 (¶ 14) (CLE000058).

³²¹ See Clearwater Rebuttal Position Statement at 5-8 (CLE000045) (citing *LES*, CLI-98-3, 47 NRC at 100).

³²² See *id.* at 7-8 (CLE000045).

³²³ *PFS*, CLI-02-20, 56 NRC at 157 n.50.

³²⁴ *Id.*

environmental justice community subgroups, and the Board finds that the FSEIS reasonably and appropriately identifies environmental justice populations.

C. The FSEIS Reasonably Adopts the GEIS Finding that Severe Accident Risks Are SMALL for All Populations, Including Environmental Justice Populations

133. After identifying minority and low-income populations that the proposed action could potentially impact, the second major step in an environmental justice review involves disclosing any disproportionately high and adverse impacts to these particular populations that, due to the population's unique characteristics, may differ from impacts to the general population.³²⁵ Thus, the next issue we must resolve is whether the FSEIS properly considers whether a severe accident at Indian Point would result in disproportionately *significant and adverse* radiological impacts to the identified minority and low-income populations.

134. The FSEIS concludes that there are no severe accident environmental impacts related to Indian Point beyond those discussed in the GEIS.³²⁶ In the environmental justice context, the FSEIS addresses, and rejects, the potential for disproportionately high and adverse impacts to environmental justice populations during a severe accident.³²⁷ It does so by adopting the GEIS determination that probability-weighted impacts associated with severe accidents are SMALL for all plants.³²⁸ Specifically, the FSEIS states the following:

Chapter 5 discusses the environmental impacts from postulated accidents that might occur during the license renewal term, which include both design basis and severe accidents. In both cases, the Commission has generically determined that impacts associated with such accidents are SMALL because nuclear plants are

³²⁵ NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260). *See also* Oct. 23, 2012 Tr. at 2738:25-2739:21 (Rikhoff) (discussing environmental justice review procedure).

³²⁶ *See* FSEIS at 5-4 (NYS00133B).

³²⁷ *See* Oct. 23, 2012 Tr. at 2775:7-10 (Rikhoff) (“And the probability weighted impact risks associated with severe accidents were also small. So we didn’t continue the analysis any further with regards to accidents.”); *see also* NRC Staff Testimony at 7 (A7) (NRC000063).

³²⁸ FSEIS at 4-53 (NYS00133B); *see also* Oct. 23, 2012 Tr. at 2774:20-2775:8 (Rikhoff).

designed and operated to successfully withstand design basis accidents, and the probability weighted impacts risks associated with severe accidents were also SMALL.

Therefore, based on this information and the analysis of human health and environmental impacts presented in Chapters 4 and 5 of this SEIS, there would be no disproportionately high and adverse impacts to minority and low-income populations from the continued operation of IP2 and IP3 during the license renewal period.³²⁹

135. The Commission determined in the GEIS and its corresponding regulations that severe accident impacts are SMALL (*i.e.*, they are neither high nor significantly adverse).³³⁰ Specifically, the GEIS concludes that the probability-weighted severe accident impacts are SMALL for all plants.³³¹ “SMALL” is defined in NRC regulations as environmental impacts that “are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.”³³²

136. The Commission reaffirmed this GEIS finding in the *Pilgrim* license renewal proceeding stating that, “[b]ecause the GEIS provides a severe accident impacts analysis that envelopes the potential impacts at *all* existing plants, the environmental impacts of severe accidents during the license renewal term already have been addressed generically in bounding fashion.”³³³ In a separate decision in the *Pilgrim* proceeding, the Commission emphasized the binding nature of the NRC regulation codifying that GEIS conclusion, stating that “no site-specific severe accident impacts analysis need be done” in license renewal proceedings.³³⁴

³²⁹ FSEIS at 4-53 (NYS00133B).

³³⁰ See Oct. 23, 2012 Tr. at 2757:12-17, 2758:13 (Rikhoff); see also NRC Staff Testimony at 7 (A7) (NRC000063).

³³¹ GEIS at 5-115 (NYS00131C); see also Oct. 23, 2012 Tr. at 2775:7-10 (Rikhoff) (“And the probability weighted impact risks associated with severe accidents were also small.”).

³³² 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1 § 3; see also Entergy Testimony at 44 (A52) (ENT000258).

³³³ *Pilgrim*, CLI-10-11, 71 NRC at 316; see also Entergy Testimony at 44 (A52) (ENT000258).

³³⁴ *Pilgrim*, CLI-12-15, slip op. at 6.

Because the GEIS SMALL finding applies to all plants without exception, and to all populations without exception, this conclusion applies to Indian Point and to all populations, including environmental justice populations. In other words, the GEIS finding necessarily excludes the need for a site-specific environmental justice severe accident evaluation.

137. Given this binding GEIS conclusion, the Board finds that, as a matter of law, environmental justice population impacts are included as part of the generic Commission finding of SMALL severe accident risks. As such, it was reasonable and appropriate for the NRC Staff to apply the generic severe accident finding in the FSEIS when determining whether environmental justice populations would suffer disproportionately significant and adverse impacts in the event of a severe accident at Indian Point.

138. As Mr. Cleary and Mr. Rikhoff both testified, the Commission determined by regulation that the impacts from severe accidents are SMALL for all plants and, because this conclusion applies to all populations, there can be no disproportionately high and adverse severe accident impacts on minority and low-income populations.³³⁵ We agree and find that under Commission precedent, the NRC Staff need not, through a plant-specific analysis, consider a severe accident's environmental justice implications because such an accident would not have "high and adverse" environmental effects.³³⁶ This conclusion comports with NRC Staff guidance indicating that "[i]f the determination can be made that human health and environmental impact(s) and/or combination of impacts would not be high and adverse, then

³³⁵ Entergy Testimony at 45 (A55) (ENT000258); NRC Staff Testimony at 7 (A7) (NRC000063); Oct. 23, 2012 Tr. at 2774:20-2775:8 (Rikhoff).

³³⁶ See *Hydro Res.*, CLI-01-4, 53 NRC at 64; *LES*, CLI-98-3, 47 NRC at 100.

there would be no disproportionately high and adverse human health and environmental impact(s) on the minority or low-income populations.”³³⁷

139. Moreover, as discussed in the remainder of this section, even if this were not true as a matter of law and Clearwater were permitted to challenge, with respect to this license renewal application specifically, the generic conclusion that severe accident risks are SMALL, Clearwater has not presented sufficient evidence to cast doubt on that conclusion as it relates to environmental justice populations identified as to the Indian Point facility. Nor has Clearwater ever in this proceeding sought a waiver under 10 C.F.R. § 2.335 of the GEIS findings with respect to issues raised in CW-EC-3A.³³⁸

1. The GEIS Severe Accident Evaluation Obviates the Need for Further Site-Specific Analysis

140. Clearwater claims that the NRC Staff may not rely on the GEIS severe accident analysis to satisfy its environmental justice obligations and must, instead, perform a separate site-specific analysis for this proceeding.³³⁹ As discussed above, the GEIS, however, contains a bounding severe accident impact analysis for all plants, including Indian Point. Given that the Supreme Court has endorsed an agency’s ability to generically address NEPA issues,³⁴⁰ the Board finds no merit to Clearwater’s insistence on a site-specific analysis beyond the bounding GEIS evaluation.

³³⁷ LIC-203, Rev. 2, App. C, at C-8 (ENT000264).

³³⁸ See 10 C.F.R. § 2.335(a) (indicating that absent a waiver, “no rule or regulation of the Commission . . . is subject to attack . . . in any adjudicatory proceeding”).

³³⁹ Clearwater Rebuttal Position Statement at 3, 15-16 (CLE000045); see also Oct. 24, 2012 Tr. at 2793:11-19 (Edelstein) (arguing that the GEIS generic evaluation omitted environmental justice for the purpose of requiring further site-specific environmental justice analysis).

³⁴⁰ See, e.g., *Balt. Gas & Elec.*, 462 U.S. at 101 (“The generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA.”).

141. Nor are we persuaded by Clearwater’s related argument that the NRC may not tier from or incorporate by reference the GEIS severe accident evaluation in the FSEIS environmental justice analysis.³⁴¹ Neither Executive Order 12,898 nor the Commission’s Policy Statement precludes the NRC Staff from relying on existing environmental analyses in the GEIS to satisfy its obligations under NEPA.³⁴² By indicating that “[t]he need for and the content” of an environmental justice analysis will be addressed in application-specific reviews, Table B-1 leaves such issues to the NRC Staff’s discretion.³⁴³ Thus, as permitted by NRC regulations,³⁴⁴ the NRC Staff may reasonably incorporate the existing generic severe accident environmental analysis in the GEIS to satisfy its obligations under NEPA.³⁴⁵

2. The GEIS Severe Accident Evaluation Accounts for Emergency Planning Issues

142. Clearwater contends that, contrary to NRC environmental justice guidance, the FSEIS fails to consider “unique” characteristics of the environmental justice populations within

³⁴¹ See Clearwater Rebuttal Position Statement at 16 (CLE000045).

³⁴² To the contrary, Executive Order 12898 indicates that, in carrying out its goals, Federal agencies should “whenever practicable and appropriate . . . eliminate unnecessary duplication of efforts through the use of existing data.” Executive Order 12,898, 59 Fed. Reg. at 7631 (ENT000259). See also Guidance Regarding NEPA Regulations, 48 Fed. Reg. 34,263, 34, 268 (1983) (“In summary, [CEQ] believes that tiering can be a useful method of reducing paperwork and duplication when used carefully for appropriate types of plans, programs and policies which will later be translated into site-specific projects.”).

³⁴³ 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-2.

³⁴⁴ 10 C.F.R. Pt. 51, Subpt. A, App. A § 1(b) (“The techniques of tiering and incorporation by reference described respectively in 40 CFR 1502.20 and 1508.28 and 40 CFR 1502.211 of CEQ’s NEPA regulations may be used as appropriate to aid in the presentation of issues, eliminate repetition or reduce the size of an environmental impact statement.”).

³⁴⁵ Contrary to Clearwater’s claim, *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800 (9th Cir. 1999), does not undermine this conclusion. That case found that a U.S. Forest Service environmental impact statement prepared for a land exchange with a private land owner could not “tier” from an existing forest management plan because that plan was not an environmental impact statement and did not analyze the land exchange’s environmental impacts. *Id.* at 810-11. In contrast, the GEIS is an environmental impact statement and does address the environmental impacts to all populations from an Indian Point severe accident. As such, this is not a case where tiering allows the proposed action’s environmental impacts to “escape environmental review.” See *id.* at 811.

50 miles of Indian Point that would result in disparate impacts from a severe accident.³⁴⁶

However, the only factors unique to minority and low-income populations that Clearwater believes are relevant to this contention depend upon its claims of purported emergency planning deficiencies or expected deficiencies in execution.³⁴⁷

143. The GEIS severe accident evaluation, however, clearly considers emergency planning issues, part of the reason such issues are not to be re-litigated here. As Mr. Cleary testified, when the NRC prepared the GEIS severe accident evaluation, it specifically considered emergency planning issues, including protective action uncertainties and evacuation-associated risks.³⁴⁸ The GEIS documents that the NRC considered uncertainties regarding “evacuation effectiveness under different circumstances, possible sheltering and its effectiveness, the effectiveness of population relocation, and the fraction of people assumed not to relocate.”³⁴⁹ Likewise, the Commission’s Statement of Considerations supporting the license renewal rule makes clear that the GEIS severe accident analysis adopts site-specific emergency planning assumptions “that are adequate to illustrate the general magnitude and types of risks that may occur from reactor accidents,” and that the analysis inherently accounts for radiological risks associated with evacuations.³⁵⁰ Accordingly, the NRC made conservative assumptions in the GEIS evaluation, meaning that the calculated results “would most likely be in the direction of

³⁴⁶ See Clearwater Rebuttal Position Statement at 11, 15-16 (CLE000045); see also Oct. 24, 2012 Tr. at 2793:11-19 (Edelstein) (arguing that the GEIS generic evaluation omitted environmental justice for the purpose of requiring further site-specific environmental justice analysis).

³⁴⁷ See, e.g., Edelstein Rebuttal Report at 4, 10-11 (CLE000058); Greene Rebuttal Testimony at 2 (A3) (CLE000046).

³⁴⁸ Entergy Testimony at 46 (A56) (ENT000258).

³⁴⁹ GEIS at 5-102 (NYS00131C).

³⁵⁰ Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. at 28,480 (NYS000127).

larger calculated early effects.”³⁵¹ Thus, the Board finds that the GEIS gives reasonable and appropriate consideration to the “unique” emergency planning factors alleged by Clearwater.

144. Clearwater’s witness, Dr. Edelstein, referenced the Fukushima accident as evidence that a severe accident would involve “significant air release of radioactive material.”³⁵² This general claim about the significance of the Fukushima’s radiological releases does not cast doubt on the GEIS conclusion in this proceeding. As the Commission explained in *Pilgrim*: “That the Fukushima accident was a severe accident with serious consequences is self-evident” and immaterial because the Commission’s “GEIS analysis encompasses severe accidents with serious consequences.”³⁵³ In other words, the GEIS provides a generic, bounding severe environmental impact analysis that is applicable to all plants (including Indian Point) and that analysis evaluates atmospheric releases associated with severe accidents similar to the Fukushima accident.³⁵⁴ Clearwater’s witnesses fail to cite any specific portion of the GEIS severe accident evaluation that they dispute and also fail to provide any reasons why they believe the GEIS conclusions are incorrect. Thus, the Board finds that Clearwater fails to call into question the bounding and conservative nature of the GEIS (*i.e.*, the analysis is conservative because, in disclosing and assessing likely effects, the GEIS errs in the direction of *overstating* those effects).

145. We also find that Clearwater has not demonstrated any reason to question the manner in which the GEIS severe accident evaluation addresses emergency planning issues for environmental justice populations. Dr. Kanter testified that “[l]essons from Fukushima have

³⁵¹ GEIS at 5-19 to -20, 5-28, 5-33, 5-44, 5-102, 5-102 (NYS00131C).

³⁵² Edelstein Report at 18 (CLE00012A); *see also* Oct. 24, 2012 Tr. at 2799:10-20 (Edelstein) (discussing the Fukushima accident).

³⁵³ *Pilgrim*, CLI-12-15, slip op. at 30.

³⁵⁴ *See* GEIS at 5-19 to 5-49 (NYS00131C); *see also* Entergy Testimony at 65 (A83) (ENT000258).

shown that evacuation centers can be unwittingly located in contaminated areas.”³⁵⁵ Similarly, Dr. Edelstein claimed that “the emergency response around Fukushima was fraught with error despite sophisticated hazard models,” and, “[a]s a result, people were sheltered who should have been evacuated and some evacuees were sent into highly contaminated areas.”³⁵⁶ Clearwater’s witnesses did not, however, present any compelling analyses regarding severe accident health effects that demonstrate that the GEIS results are not conservative or to suggest that the Indian Point area would suffer from any of the failures that they ascribe to the Fukushima response. Absent any such evidence, the Board finds that these claims are without merit because the GEIS severe accident evaluation specifically addresses emergency planning and other uncertainties in a conservative manner that tends to overstate likely impacts.³⁵⁷

3. Non-Radiological Impacts Are Outside the Scope of This Contention

146. Clearwater raised a number of issues related to non-radiological severe accident impacts that are outside the scope of CW-EC-3A and this proceeding. As admitted, this contention’s scope is limited to whether a severe accident at Indian Point would result in disproportionately significant and adverse *radiological* impacts on environmental justice populations.³⁵⁸ At the hearing, we emphasized that CW-EC-3A was limited to the alleged

³⁵⁵ Kanter Rebuttal Testimony at 7 (A8) (CLE000048).

³⁵⁶ Edelstein Rebuttal Report at 24 (CLE000058); *see also* Oct. 23, 2012 Tr. at 2800:5-8 (Edelstein) (discussing Fukushima difficulties). Dr. Kanter’s and Dr. Edelstein’s claims about Fukushima evacuation difficulties appear to be a backdoor challenge that current Indian Point emergency plans are somehow flawed. Because such matters are outside the scope of this proceeding, we do not consider this testimony to the extent that it is intended to prove that current Indian Point emergency plans are somehow flawed or might not work as designed.

³⁵⁷ GEIS at 5-102 (NYS00131C); *see also* Final Rule; Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. at 28,480 (NYS000127).

³⁵⁸ *See Indian Point*, LBP-08-13, 68 NRC at 200.

“potential for disproportional increased exposure to *radiation* to the environmental justice community.”³⁵⁹

147. Notwithstanding CW-EC-3A’s limited scope, Clearwater presented extensive testimony on the alleged non-radiological impacts resulting from a potential severe accident at Indian Point. For example, Ms. Greene testified regarding the potential for psychological and emotional trauma for evacuees; illness resulting from evacuation; and elderly and disabled population medical needs during an evacuation.³⁶⁰ Similarly, Dr. Edelstein testified about the potential for psychological impacts, crime, violence, and other forms of mistreatment in prisons.³⁶¹

148. The Commission has emphasized that intervenors are not permitted to change the scope of a contention as admitted by the Board. In the *Vogtle* proceeding, for example, the Commission emphasized that the scope of a contention is limited to the legal and factual issues pled with particularity in the intervention petition, including its stated bases.³⁶² Based on this standard, we decline to consider Clearwater’s claims concerning the alleged non-radiological impacts resulting from a potential severe accident at Indian Point.

149. The Board notes further that Clearwater’s argument concerning the need to consider these issues is inconsistent with Supreme Court precedent holding that NEPA only requires consideration of impacts that have a “reasonably close causal relationship” with “a change in the physical environment.”³⁶³ Clearwater has not presented any credible or compelling

³⁵⁹ Oct. 23, 2012 Tr. at 2735:7-8 (Judge McDade) (emphasis added).

³⁶⁰ Greene Rebuttal Testimony at 3-5 (A10-13) (CLE000046); Oct. 23, 2012 Tr. at 2859:6-2862:1 (Greene).

³⁶¹ Edelstein Report at 7-11, 21-23, 31-39 (CLE000012); Oct. 23, 2012 Tr. at 2795:6-2798:10 (Edelstein). Other Clearwater witnesses also testified about potential mistreatment in prisons. *See, e.g.*, Oct. 23, 2012 Tr. at 2805:24-2806:4 (Papa) (speculating about prisoner behavior in the event of a nuclear release).

³⁶² *S. Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), CLI-10-5, 71 NRC 90, 100 (2010).

³⁶³ *Metro. Edison Co.*, 460 U.S. at 772-73.

evidence that such non-radiological impacts have a close causal relationship to any change in the physical environment. Likewise, to the extent Clearwater claims that the NRC’s environmental justice evaluation should have considered environmental impacts resulting from terrorist attacks, the Commission and the Board have consistently held that impacts associated with such attacks are “simply too far removed from the natural or expected consequences of agency action to require a study under NEPA.”³⁶⁴

* * * *

150. In light of the foregoing, the Board finds that the FSEIS appropriately considers and discloses severe accident risk-based environmental impacts to environmental justice populations. Given the binding GEIS conclusion that the probability-weighted impacts associated with severe accidents are SMALL, the Board finds that it is reasonable for the FSEIS to apply this generic finding in determining that environmental justice populations would not suffer disproportionately significant and adverse impacts. Even if Clearwater were permitted to challenge the generic conclusion that severe accident risks are SMALL, Clearwater has not presented sufficient evidence to cast doubt on that conclusion as it relates to environmental justice populations.

D. The FSEIS Reasonably Addresses Clearwater’s Emergency Planning Concerns by Stating That Emergency Planning Is Not Within the Scope of License Renewal

151. As we noted above, emergency planning issues are not within the scope of NRC license renewal proceedings and are specifically beyond the scope of this contention, notwithstanding that the overwhelming focus of Clearwater’s testimony is on its claims that area emergency planning is inadequate. The Commission’s regulations relating to emergency

³⁶⁴ *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-07-8, 65 NRC 124, 129 (2007); see also *Indian Point*, LBP-08-13, 68 NRC at 143 (“[W]e are nonetheless bound by the Commission’s ruling in *Oyster Creek* ‘that NEPA does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities.’”).

planning requirements, at 10 C.F.R. § 50.47(a)(1)(i), state that “[n]o finding under this section is necessary for issuance of a renewed nuclear power reactor operating license.”³⁶⁵ In issuing that regulation, the Commission explained that:

The NRC has determined that the current requirements . . . provide reasonable assurance that an acceptable level of emergency preparedness exists at any operating reactor at any time in its operating lifetime. The Commission has amended 10 CFR 50.47 to clarify that no new finding on emergency preparedness will be made as part of a license renewal decision.³⁶⁶

152. Notwithstanding this clear regulatory language and guidance, Clearwater submitted comments on the Indian Point DSEIS related to emergency planning. As noted above, in responding to those comments on the DSEIS that mirror Clearwater’s current testimony, the FSEIS correctly points out that emergency planning issues are not within the scope of NRC license renewal proceedings.³⁶⁷ The NRC Staff’s response to these comments was reasonable and complies with NEPA. NEPA does not require the NRC Staff to resolve conflicts raised by opposing viewpoints.³⁶⁸ Rather, the NRC Staff’s obligation in the FSEIS is to “include consideration of major points of view concerning the environmental impacts of the proposed action.”³⁶⁹ This means that the FSEIS must reference opposing viewpoints,³⁷⁰ make any differences in opinion readily apparent, and provide a good faith, reasoned response to comments.³⁷¹ Appendix A of the FSEIS fully documents Clearwater’s emergency planning

³⁶⁵ “This section” refers to Section 50.47(a)(1)(i)’s requirement that, before the NRC issues an initial operating license, it must make the finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

³⁶⁶ Final Rule, Nuclear Power Plant License Renewal, 56 Fed. Reg. 64,943 64,966-67 (Dec. 31, 1991).

³⁶⁷ See FSEIS at A-106 to -107 (NYS00133D). See also Oct. 23, 2012 Tr. at 2757:1-7 (Rikhoff) (indicating that Clearwater’s emergency planning concerns are outside the scope of license renewal analysis).

³⁶⁸ See *California v. Block*, 690 F.2d 753, 773 (9th Cir. 1982).

³⁶⁹ 10 C.F.R. § 51.71(b).

³⁷⁰ See *Comm. for Nuclear Responsibility, Inc. v. Seaborg*, 463 F.2d 783, 787 (D.C. Cir. 1971).

³⁷¹ See *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973).

comments and provides a well-reasoned response to those comments.³⁷² Thus, the NRC Staff fully met its obligation and provided the required “meaningful reference”³⁷³ to Clearwater’s opposing viewpoints concerning the NRC’s proposed decision, made the differences in opinion readily apparent, and provided a “good faith, reasoned analysis in response.”³⁷⁴

E. Indian Point, State, and Local Emergency Plans Provide Reasonable Assurance of Adequate Protection of All Members of the Public, Including Environmental Justice Populations

153. Assuming, however, that it were necessary or appropriate to address emergency planning issues in more detail, the following discussion, based on the full record before the Board, supplements the FSEIS discussion and demonstrates that Indian Point, New York, and local emergency plans provide reasonable assurance that all populations would be accounted for in the event of a radiological emergency, and thus, no population would suffer disproportionately high and adverse impacts.

1. Emergency Planning Regulatory Framework

154. As a general matter, the longstanding existing NRC, FEMA, and New York emergency planning regulatory framework provides reasonable assurance that appropriate protective measures would be taken in the event of a severe accident. NRC regulations require “reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.”³⁷⁵ To ensure this requirement is met, NRC requires that licensee emergency plans consider a range of protective actions for all members of the public within the

³⁷² See FSEIS at A-106 to -107 (NYS00133D). See also NRC Testimony at 10 (A9) (“Comments on the environmental justice analysis in the DSEIS were also addressed in the FSEIS.”).

³⁷³ *Seaborg*, 463 F.2d at 787.

³⁷⁴ *Silva*, 482 F.2d at 1285.

³⁷⁵ 10 C.F.R. § 50.47(a)(1)(i). See also NRC Staff Testimony at 23 (A29) (NRC000063); Oct. 23, 2012 Tr. at 2769:20-2770:2, 2877:8-16 (Slobodien) (indicating that the NRC’s “reasonable assurance” standard includes all populations).

10-mile emergency planning zone (“EPZ”).³⁷⁶ By regulation, those protective actions *must* include evacuation and sheltering.³⁷⁷ In the context of a NEPA review, the Board finds that it would be unreasonable for this Board to find that a severe accident at facilities currently in compliance with these requirements can result in disproportionately high and adverse radiological impacts to environmental justice populations. Moreover, even if it could—in some hypothetical circumstance—be reasonable for the Board to, in effect, second-guess the current regulatory requirements’ scope and effectiveness, and make such an environmental justice finding, in this case Clearwater has failed to present evidence sufficient to make it reasonable for to the Board to do so.

155. FEMA is the lead federal agency responsible for making findings and determinations with regard to offsite state and local governmental radiological emergency planning efforts necessary for protecting public health and safety.³⁷⁸ Consistent with FEMA’s past findings, in the most recent FEMA biennial report, FEMA found that “State and local preparedness is adequate to protect the health and safety of the public living in the vicinity of the Indian Point Energy Center and that there is reasonable assurance that appropriate measures can be taken offsite in the event of a radiological emergency.”³⁷⁹ As FEMA is the federal agency with disaster response expertise, it would be unreasonable for this Board to reach a contrary conclusion for purposes of a NEPA review. And again, even if we theoretically could reach such a contrary conclusion, the evidence before us does not support such a conclusion.

³⁷⁶ 10 C.F.R. § 50.47(b)(10). *See also* NRC Staff Testimony at 23 (A29) (NRC000063).

³⁷⁷ 10 C.F.R. § 50.47(b)(10).

³⁷⁸ *See* 10 C.F.R. § 50.47(a)(2), (a)(1)(i), (b); 44 C.F.R. Pt. 350. *See also* NRC Staff Testimony at 23 (A29) (NRC000063).

³⁷⁹ Letter from L. Canton, FEMA, to D. Tailleart, NRC (Dec. 5, 2011) (ENT000273) (transmitting the Final Exercise Report for the Indian Point Energy Center Radiological Emergency Preparedness Plume Pathway Exercise Conducted on September 14, 2010 (Nov. 30, 2011)).

156. State and local governments are generally responsible for developing, maintaining, and implementing emergency plans that adequately protect the public health and safety by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a severe accident.³⁸⁰ In New York, state and local governments must follow Executive Law Article 2-B, which requires that state and local “emergency response functions be coordinated using recognized practices in incident management in order to bring the *fullest protection and benefit to the people*” of New York.³⁸¹ For purposes of NEPA, it would be unreasonable for this Board to conclude that New York State and county emergency plans are in violation of state law and do not provide the “fullest protection” to all New York residents, including environmental justice populations. And again, even if theoretically we could reach such a contrary conclusion, the evidence before us does not support doing so.

157. Executive Law Article 2-B also requires that the State and each county have comprehensive emergency management plans.³⁸² Executive Law Article 2-B requires that these emergency management plans include “programs to assist victims of disasters, with particular attention to the needs of the poor, the elderly, individuals with disabilities and other groups which may be especially affected.”³⁸³ For purposes of NEPA, it would be unreasonable for this Board to conclude that New York and county emergency plans are in violation of state law and do not include programs that provide special assistance to “the poor, the elderly, individuals with

³⁸⁰ 44 C.F.R. § 350.5(b); *see also* NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Rev. 1, Supp. 3, at 1; 1-16 (1996) (ENT000271). *See also* NRC Staff Testimony at 27-28 (A33) (NRC000063); Oct. 23, 2012 Tr. at 2876:13-19 (Slobodien) (indicating that the state and counties follow Executive Law 2-B).

³⁸¹ New York Executive Law Article 2-B § 20(1)(c) (ENT000283) (emphasis added).

³⁸² *Id.* at §§ 21(3)(c), 23(1).

³⁸³ *Id.* at § 22(3)(b)(12), 23 (7)(b)(12)

disabilities and other groups which may be especially affected.”³⁸⁴ And again, even if we could theoretically reach such a conclusion, the evidence before us does not support our doing so.

158. Based on this emergency planning framework, the Board finds that Indian Point, New York, and local emergency plans provide reasonable assurance that all populations would be accounted for in the event of a radiological emergency, and thus, no population would suffer disproportionately high and adverse impacts. As Mr. Slobodien testified at the hearing, “[t]here are no exceptions” that allow for a lower level of protection for environmental justice populations.³⁸⁵ Further, as Mr. Slobodien made clear, the effectiveness of this emergency planning framework is regularly and rigorously demonstrated.³⁸⁶ New York conducts and evaluates county emergency exercises in the Indian Point 10-mile EPZ in odd-numbered years (*e.g.*, 2011).³⁸⁷ Similarly, in even-numbered years (*e.g.*, 2012), FEMA conducts exercises to assess state and county emergency preparedness.³⁸⁸ Thus, every year, drills and exercises are performed to ensure these plans work as designed.

159. Notwithstanding the reasonable assurance that this comprehensive framework provides, each of Clearwater’s challenges to the adequacy of the Indian Point emergency plan are discussed below and shown to lack merit.

2. Evacuations Beyond 10 Miles

160. Clearwater argued that the NRC cannot assume that severe accident impacts are SMALL for environmental justice impacts because there is no evacuation plan at all beyond 10 miles and it is not credible to believe that millions of people living within 50 miles of Indian

³⁸⁴ *Id.*

³⁸⁵ Oct. 23, 2012 Tr. at 2877:16 (Slobodien).

³⁸⁶ *Id.* at 2884:18-2885:8 (Slobodien).

³⁸⁷ *Id.* at 2884:19-22 (Slobodien).

³⁸⁸ *Id.* at 2884:22-2885:4 (Slobodien).

Point could be evacuated on an *ad hoc* basis.³⁸⁹ Dr. Kanter testified that the Fukushima accident demonstrates that evacuations would likely be required for people within 50 miles of Indian Point in the event of a severe accident.³⁹⁰

161. In denying a rulemaking petition to expand the 10-mile EPZ, the Commission specifically considered and rejected a similar argument claiming that *ad hoc* actions beyond 10 miles would be inadequate, and responded to that assertion as follows:

[T]he Commission firmly believes that emergency actions could be successfully carried out beyond 10-mile EPZ for the following reasons: First, the 10-mile planning basis establishes an infrastructure consisting of emergency organizations, communication capabilities, training and equipment that are similar to other normal community emergency organizations, such as police and fire departments that can be used in the event of an accident at the facility. Second, the radio and TV emergency broadcasting systems that NRC requires for prompt notification of the public within the 10-mile EPZ does reach beyond 10 miles. Third, if emergency actions were necessary beyond 10 miles, the time available to take those actions would be significantly greater than the time available for the taking of protective actions for persons close to the reactor (within 2 miles). This significant additional time (many hours to days) would permit the use of resources from other states, other utilities, the Federal government, and even the international community.³⁹¹

The Commission also concluded that the need for protective actions beyond a few miles from the plant is extremely unlikely.³⁹²

162. As Mr. Slobodien and Ms. Milligan confirmed, the Commission's conclusions in that rulemaking petition denial hold true today.³⁹³ Since the Fukushima accident, the NRC has

³⁸⁹ Clearwater Rebuttal Position Statement at 28 (CLE000045).

³⁹⁰ Kanter Rebuttal Testimony at 2-3 (A4) (CLE000048).

³⁹¹ Emergency Preparedness at Nuclear Power Plants; Denial of Petitions for Rulemaking, 55 Fed. Reg. 5603, 5606 (Feb. 16, 1990) (ENT000282).

³⁹² *See id.*

³⁹³ Entergy Testimony at 49-54, 65 (ENT000258); NRC Staff Testimony at 24, 35 (NRC000063).

made clear that the existing emergency preparedness framework and regulations—including the 10-mile EPZ—continue to provide reasonable assurance of adequate protection of public health and safety in the event of a radiological emergency.³⁹⁴ The NRC has also emphasized “that the size of the established EPZs are not limits, but rather provide for an emergency planning framework that would allow expansion or contraction of response efforts based on actual and projected radiological conditions.”³⁹⁵ In short, Clearwater attempts to suggest that, because the NRC’s regulations set heightened requirements for areas within the 10-mile EPZ, there is no capacity for meaningful and timely response actions if they are ever to be required beyond the 10-mile EPZ. Such a conclusion is unwarranted given both the specific evidence in this case and the Commission’s prior findings.

163. Dr. Kanter’s testimony on the Fukushima accident does not undermine this conclusion. The NRC has recently indicated that the NRC’s 50-mile evacuation recommendation to the U.S. Ambassador in Japan was “was not based on the specific radiological conditions that existed at that time, but rather on a conservative assessment of radiological conditions that could possibly exist given the limited information available.”³⁹⁶ In contrast, the NRC would have “substantially more information available” for an event involving a U.S. nuclear power plant.³⁹⁷ Given those circumstances, the Board finds that Dr. Kanter’s reliance on NRC’s Fukushima recommendation as something that can provide meaningful instruction for the Board in assessing the potential need to evacuate the area surrounding Indian Point is misplaced and without merit. Based on the evidentiary record, the Board finds that, in

³⁹⁴ See, e.g., Letter from W. Dean, NRC, to M. Kaplowitz, Westchester County Board of Legislators, District #4, at 1-3 (July 28, 2011) (ENT000299).

³⁹⁵ *Id.* at 1.

³⁹⁶ *Id.* at 2.

³⁹⁷ *Id.*

the extremely unlikely event that protective actions beyond the 10-mile EPZ are needed, state and local governments could readily develop and implement protective actions as necessary.

3. Evacuations Within 10 Miles

164. Clearwater also argued that the NRC cannot find that severe accident impacts are SMALL because evacuations within 10 miles of Indian Point may be difficult or impossible. As evidence of evacuation-related problems within 10 miles, Clearwater extensively referenced Hurricane Katrina,³⁹⁸ based on Dr. Edelstein's and Dr. Larsen's testimony discussing associated reported problems with evacuations in Louisiana.³⁹⁹

165. Mr. Slobodien and Ms. Milligan both demonstrated that Dr. Edelstein's and Dr. Larsen's references to alleged problems in Louisiana during Hurricane Katrina lend no support to Clearwater's argument that a severe accident at Indian Point would result in disproportionately high and adverse human health effects to environmental justice populations.⁴⁰⁰ To the contrary, an NRC-sponsored study assessing Hurricane Katrina (and other large scale evacuations) found that emergency planning for nuclear power plants substantially anticipates and already addresses the lessons learned in the large scale evacuations studied (including issues identified as part of the Hurricane Katrina evacuations).⁴⁰¹ Nothing in the NRC report even remotely suggests that evacuations associated with a severe accident would result in disproportionately high and adverse human health effects to environmental justice

³⁹⁸ Clearwater Position Statement at 25 (CLE000002); Clearwater Rebuttal Position Statement at 26-27 (CLE000045).

³⁹⁹ Edelstein Report at 7-11, 13, 19, 21-23, 26-28, 31-38 (CLE000012); Oct. 23, 2012 Tr. at 2796:14-2797:7 (Edelstein); *id.* at 2807:14-25, 2810:5-2811:8, 2813:16-2814:19 (Kanter).

⁴⁰⁰ Entergy Testimony at 64 (A82) (ENT000258); NRC Staff Testimony at 33-34 (A38) (NRC000063).

⁴⁰¹ *See* NUREG/CR-6981, Assessment of Emergency Response Planning and Implementation for Large Scale Evacuations at 65 (Oct. 2008) ("NUREG/CR-6981") (ENT000298).

populations.⁴⁰² Therefore, as with Clearwater’s Hurricane Sandy argument, we find that Clearwater’s testimony and evidence “dealing with an unrelated weather event are immaterial and not relevant to the reasonableness of the NRC Staff’s environmental justice review of Indian Point, Units 2 and 3.”⁴⁰³ And even if relevant, that testimony and evidence does not provide a reasoned factual basis that undermines the NRC Staff’s analysis.

4. Shelter-in-Place

166. According to Clearwater, the shelter-in-place protective action is inadequate to mitigate severe accident impacts.⁴⁰⁴ Dr. Edelstein and Mr. Filler both testified that certain environmental justice populations will suffer disparate impacts because the Westchester County emergency plan states that shelter-in-place may be used for populations that are not readily mobile (*e.g.*, prisons, hospitals) at up to 5 rem in normal circumstances and up to 10 rem under unusually hazardous circumstances.⁴⁰⁵ As further noted by Dr. Edelstein and Mr. Filler, the dose guideline for the general population is 5 rem, even under unusually hazardous circumstances.⁴⁰⁶

167. As an initial matter, as Mr. Slobodien and Ms. Milligan testified, sheltering-in-place is a reasonable, acceptable, and federally-recognized protective action recommendation.⁴⁰⁷ Consistent with federal guidance, Westchester County has designated shelter-in-place as an appropriate protective action option for certain institutions including Sing Sing Correctional Facility, Franklin Delano Roosevelt Veterans Administration Hospital, and Hudson Valley

⁴⁰² Entergy Testimony at 64 (A89) (ENT000258).

⁴⁰³ Dec. 5, 2012 Order at 3.

⁴⁰⁴ Clearwater Rebuttal Position Statement at 24 (CLE000045). *See also* Oct. 23, 2012 Tr. at 2799:2-2801:23 (Edelstein) (discussing concerns with sheltering).

⁴⁰⁵ Filler Direct Testimony at 1 (CLE000009); Edelstein Report at 21 (CLE00012B).

⁴⁰⁶ Filler Direct Testimony at 1 (CLE000009); Edelstein Report at 21 (CLE00012B).

⁴⁰⁷ Entergy Testimony at 75-76 (A67) (ENT000258); NRC Staff Testimony at 28-29 (A34-35) (NRC000063). *See also* Oct. 23, 2012 Tr. at 2879:14-2880:15 (Slobodien).

Hospital Center of Peekskill/Cortlandt.⁴⁰⁸ Similarly, Rockland County has designated selective shelter-in-place as an appropriate protective action option for Helen Hayes Rehabilitation Hospital, the Robert E. Yeager Health Center, and the County Correctional Facility.⁴⁰⁹ The parties agree that the 5 rem and 10 rem guidelines discussed above apply to all of the above-referenced facilities.⁴¹⁰ While there is no reason to believe that all such facilities should be considered environmental justice populations under the criteria in the NRC Environmental Justice Policy Statement (and certainly Clearwater provided no such evidence to this effect), it remains clear that even if they are, these sheltering guidelines would apply and serve to protect any such environmental justice population.

168. Those 5 and 10 rem guidelines come directly from EPA protective action recommendation guidance established to “safeguard public health.”⁴¹¹ NRC regulations require that protective action recommendations be consistent with this federal guidance.⁴¹² As Mr. Slobodien and Ms. Milligan testified, EPA guidance makes clear that sheltering may be preferable to evacuation for institutions and other special groups in the population.⁴¹³ Moreover, as large concrete structures, institutions are often “superior” for sheltering, as Mr. Slobodien explained.⁴¹⁴

169. Ms. Milligan confirmed that “while it is possible that special populations, such as those incarcerated at Sing Sing could receive radiation doses higher than other populations that

⁴⁰⁸ Westchester County Radiological Emergency Plan at III-30 (Mar. 2011) (“Westchester REPP”) (ENT00285A).

⁴⁰⁹ Rockland County Radiological Emergency Preparedness Plan at III-31 (May 2010) (“Rockland REPP”) (ENT00286A).

⁴¹⁰ Entergy Testimony at 51-52 (ENT000258); NRC Staff Testimony at 33 (NRC000063); Filler Direct Testimony at 1 (CLE000009); Edelstein Report at 21 (CLE00012B).

⁴¹¹ EPA Guidance 400-R-92-001 at iii (ENT00284A).

⁴¹² See 10 C.F.R. § 50.47(b)(10).

⁴¹³ Entergy Testimony at 51-52 (A64) (ENT000258); NRC Staff Testimony at 32-33 (A37) (NRC000063).

⁴¹⁴ Oct. 23, 2012 Tr. at 2879:14-2880:15 (Slobodien).

are immediately able to self-evacuate, any doses received would be within the EPA dose guidelines,⁴¹⁵ a fact that goes directly to whether any effects would be significant (see below). Nor did Clearwater offer testimony suggesting doses to environmental justice populations would ever exceed EPA guidelines.

170. Mr. Slobodien and Ms. Milligan—two highly-qualified health physicists—also confirmed that the EPA guidelines are more than sufficient to safeguard public health. Mr. Slobodien explained that even the higher, 10 rem guideline is “far less” than the dose that would be required to see any adverse health impacts.⁴¹⁶ Similarly, Ms. Milligan testified that any dose that fell within EPA guidelines would not be considered a disproportionate adverse impact.⁴¹⁷ We agree with Mr. Slobodien and Ms. Milligan on this point. Consistent with CEQ guidance, any dose within EPA guidelines would not be “significant (as employed by NEPA), or above generally accepted norms” and therefore, could not result in disproportionately high and adverse human health effects.⁴¹⁸

171. Dr. Kanter disagreed with this conclusion, claiming that “the consensus of the medical establishment is that there is no cutoff under which there is no risk or danger of radiation, and that there is a linear relationship of radiation to health risk and health damage.”⁴¹⁹ We find that Dr. Kanter’s position lacks merit. The “linear-no-threshold” hypothesis, which conservatively assumes that, at low doses, a simple proportionate relationship exists between

⁴¹⁵ Oct. 23, 2012 Tr. at 2760:22-2761:2 (Milligan). Ms. Milligan also demonstrated the conservative nature of these guidelines in her testimony indicating that emergency planning forward-looking dose projections consider consequences for maximally-exposed individuals in the entire population. *Id.* at 2763:16-2765:9, 2893:7-2894:10 (Milligan).

⁴¹⁶ *Id.* at 2781:13-2782:1 (Slobodien).

⁴¹⁷ *Id.* at 2762:6-2763:12, 2779:13-23 (Milligan).

⁴¹⁸ *See id.* at 2782-83; CEQ Environmental Justice Guidance at 25 (ENT000266).

⁴¹⁹ Oct. 23, 2012 Tr. at 2855:14-16 (Kanter).

radiation dose and cancer risk, formed the basis for EPA's 10 rem dose guideline.⁴²⁰

Furthermore, the 10 rem guideline is identical to other generally-accepted standards, including those found in the National Research Council report entitled, "Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII – Phase 2" ("BEIR VII Report") (RIV000093).⁴²¹

In sum, the Board is guided by EPA's assessment of where significant risk emerges. And even if there is, as Dr. Kanter maintains, a linear-no-threshold relationship, that does not establish that at the levels below EPA-thresholds the resulting risks are "significant" in the NEPA-sense, such that they must be further assessed and discussed.

172. Based on this evidence, the Board finds that Clearwater's claim that certain institutions are more likely to shelter than evacuate if there were a severe accident at Indian Point does not demonstrate that a severe accident would result in disproportionately significant and adverse radiological impacts on environmental justice populations. And to the degree there is any such risk, the Board has hereby given the public a fair sense of why that might be the case, and the responding considerations.

5. Transportation-Dependent Populations

173. Clearwater argues that the lack of transportation options makes environmental justice populations vulnerable to disproportionately high and adverse environmental impacts in the event of a severe accident.⁴²² Mr. Mair testified that minority and low-income residents in Peekskill and New York City are highly dependent on public-transport.⁴²³ Ms. Greene also testified that the potential for high and adverse environmental impacts was obvious because, if an

⁴²⁰ EPA-400 at 1-5, B-1 (ENT00284A-B).

⁴²¹ BEIR VII Report at 2 (RIV000093) (defining "low dose" as doses in the range of near zero up to about 10 rem); *see also id.* at xi (listing conversion factors from Sv to rem).

⁴²² Clearwater Rebuttal Position Statement at 8 (CLE000045).

⁴²³ Mair Direct Testimony at 8 (A12) (CLE000007); Oct. 23, 2013 Tr. at 2832:14-2834:3 (Mair).

evacuation were necessary, people without cars would be disadvantaged compared to those with cars, and the mobility-impaired would be even further disadvantaged.⁴²⁴

174. As an initial matter, Clearwater's own documents show that 42 percent of the people in the New York-metropolitan area, and almost half of the people in Manhattan, take public transportation.⁴²⁵ Clearwater's documents further indicate that this has more to do with the wide availability of public transit in the New York-metropolitan area, and the higher costs associated with owning and maintaining a car in an urban setting, than it does with income differences in these populations.⁴²⁶ Thus, the Board concludes that Clearwater has failed to establish the necessary association between transport-dependency and environmental justice because transport-dependence is not associated with unique characteristics of environmental justice communities. Rather, it relates more to other societal factors that equally affect environmental justice and non-environmental justice communities in and around the New York-metropolitan area.

175. Even assuming, however, that transportation-dependence is a valid basis to trigger greater environmental justice scrutiny, Entergy and NRC Staff witnesses both testified that New York State and local county emergency plans address evacuation of transport-dependent individuals.⁴²⁷ Underlying emergency planning documents confirm that extensive consideration is given to assisting transport-dependent individuals evacuate.⁴²⁸ In short, those plans make clear

⁴²⁴ Greene Rebuttal Testimony at 6 (A19) (CLE000046).

⁴²⁵ Alan Berube et al., Socioeconomic Differences in Household Automobile Ownership Rates: Implications for Evacuation Policy at 4, 31 (June 2006) (CLE000022).

⁴²⁶ *Id.* at 5.

⁴²⁷ Entergy Testimony at 53-54 (A66-67) (ENT000258); NRC Staff Testimony at 35-36 (A40) (NRC000063).

⁴²⁸ *See, e.g.*, Westchester REPP, Implementation Procedure 5.0, Attach. 2 (ENT00285C); Rockland REPP, DPT-2, § 5.4, Attach. 3 (May 2010) (ENT00286B). For example, the Westchester County Indian Point Emergency Guide explains that free emergency buses will pick up individuals along designated routes and take them to a reception center. Westchester County Indian Point Emergency Guide at 6 (2010-2011 ed.) (ENT000287).

that state and county governments will provide assistance for those who cannot evacuate on their own, including for those in special facilities and for the non-institutionalized mobility impaired. For example, as Mr. Slobodien testified, the county governments have letters of agreement with bus and ambulance services to facilitate evacuation for transport-dependent individuals.⁴²⁹

176. Ms. Greene speculated that people awaiting buses during an evacuation will be at greater risk “because they have to wait at open air bus stops for transport to arrive.”⁴³⁰

Ms. Greene and Clearwater’s other witnesses, however, have not conducted any assessment to determine the likelihood that people awaiting buses will receive a higher dose than those relying on private transportation. Moreover, the scenario Ms. Greene envisions is unlikely to take place because existing emergency plans make clear that sheltering-in-place would be ordered for all populations if a radiological release is short-term and for areas that cannot be evacuated before the plume arrives.⁴³¹ Ultimately, Ms. Greene rests her claims on the unstated presumption that evacuation would always be the preferred incident response and that the resources to do so will not be available. She is not qualified by expertise to make the former claim and the evidence fails to support the latter.

177. Based on this evidence, the Board finds that Clearwater’s testimony about the evacuation of transport-dependent and mobility-impaired individuals is based on speculation and conjecture, offered through witnesses not qualified in the field, and directly contrary to other compelling record evidence. State and county plans specifically accommodate those populations’ unique needs. The Board thus concludes that transport-dependent individuals would not be subjected to disproportionately high and adverse severe accident impacts.

⁴²⁹ Oct. 23, 2012 Tr. at 2915:20-2916:6 (Slobodien).

⁴³⁰ Greene Rebuttal Testimony at 6 (A19) (CLE000046).

⁴³¹ New York REPP at III-50 (ENT000272); Westchester REPP at III-31 (ENT00285A).

6. Correctional Facilities

178. Dr. Edelstein testified that “Entergy and NRC Staff fail to show that Shelter in Place is a sufficiently protective mitigation” for Sing Sing prisoners and that “Evacuation is Unlikely and would be Perilous for Sing Sing Inmates.”⁴³² Similarly, Mr. Papa testified that sheltering-in-place at Sing Sing would be inappropriate given its poor ventilation and that an evacuation would be dangerous given the chaos that might ensue when moving prisoners during a radiological emergency.⁴³³

179. As previously noted, sheltering-in-place is a widely-accepted, even preferable under certain circumstances, protective action recommendation. Further, New York State regulations require correctional facilities to maintain detailed emergency plans and well-trained staff.⁴³⁴ Clearwater does not dispute that Sing Sing is a New York State Department of Corrections (“NYSDOC”) facility covered by State and county emergency plans.

180. Ms. Milligan testified that NYSDOC officials are confident that they will be able to safely shelter or evacuate prisoners from Sing Sing should the need arise.⁴³⁵ Before the hearing, Ms. Milligan met with Colonel Michael Kirkpatrick, head of NYSDOC and head of the NYSDOC emergency response team, and spent three hours going through emergency plans for Sing Sing and other correctional facilities in New York.⁴³⁶ Although the details of those plans are not publicly available for security reasons, Colonel Kirkpatrick conveyed “absolute

⁴³² Edelstein Rebuttal Report at 10, 18 (CLE000058).

⁴³³ Oct. 23, 2012 Tr. at 2803:25-2804:2 (Papa); Papa Direct Testimony at 3-4 (CLE000004).

⁴³⁴ *See, e.g.*, 9 NYCRR AA § 7651.31(c)(4) (ENT000289).

⁴³⁵ NRC Staff Testimony at 30-31 (NRC000063).

⁴³⁶ Oct. 23, 2012 Tr. at 2768:11-19 (Milligan).

confidence” that Sing Sing could safely evacuate its prisoners in a “very timely fashion” if necessary.⁴³⁷

181. Contrary to Mr. Papa’s anecdotal predictions based on his experience as a prisoner at Sing Sing over 15 years ago, Colonel Kirkpatrick also indicated that prisoners become more cooperative during evacuations, because, unsurprisingly, it is in their own best interest to do so.⁴³⁸

182. The publically-available Witt Report—which Clearwater relied upon earlier in this proceeding—also discussed some of the details of Sing Sing’s evacuation plan and confirmed that Sing Sing can and would be evacuated, if necessary.⁴³⁹ It also makes clear that Sing Sing has “extensive shelter-in-place capability and consider[s] [itself] to be an asset to the community.”⁴⁴⁰

183. Based on this evidence, the Board finds that Clearwater’s concerns regarding NYSDOC’s capability to safely evacuate or shelter its prisoners is unfounded. State and county plans specifically accommodate prisoner needs. The Board thus finds that prisoners would not suffer disproportionately significant and adverse impacts in the event of a severe accident.

7. Nursing Homes and Hospitals

184. Based on Clearwater’s interviews, Ms. Greene testified that nursing homes and hospitals would be difficult to evacuate.⁴⁴¹ Similarly, Mr. Simms testified about purported

⁴³⁷ *Id.* at 2771:7-11, 2917:19-22 (Milligan).

⁴³⁸ *Id.* at 2910:14-22 (Milligan).

⁴³⁹ James Lee Witt Associates, LLC, Review of Emergency Preparedness of Area Adjacent to Indian Point and Millstone at 4.5.2.1, at 71 (2003) (“Witt Report”) (ENT000263). In 2003, at the request of then-New York Governor Pataki, James Lee Witt Associates, an emergency preparedness consulting firm, prepared the Witt Report as a comprehensive and independent review of emergency preparedness for the area around Indian Point. *See id.* at vi.

⁴⁴⁰ *Id.* at 71 (4.5.2.1).

⁴⁴¹ *See* Greene Direct Testimony at 13-22 (CLE000010).

challenges in emergency planning and preparedness at Bethel Springvale Inn, where he resides.⁴⁴²

185. As an initial matter, we have concerns about the reliability of Clearwater’s interviews. It is well-established that any interview’s reliability depends almost exclusively on whether the interview was conducted according to generally accepted interview principles—*i.e.*, the questions to be asked of interviewees are framed in a clear, non-leading manner and are asked by competent, unbiased interviewers to ensure objectivity.⁴⁴³ Clearwater presented only a cursory description of the method in which these interviews were conducted and Ms. Greene testified only to the results without providing any underlying documents aside from a blank interview form.⁴⁴⁴ Notwithstanding her assurances that interview questions were “straightforward” and included “many sub-inquiries intended to be answered with simple ‘yes’ or ‘no’ responses,”⁴⁴⁵ Ms. Greene provided no indication that steps were taken to ensure interviewer objectivity. This is not a trivial point, as the Commission has previously found that one of Clearwater’s interviewers, Ms. Susan Shapiro, displayed an “appalling lack of candor” and repeatedly misrepresented facts in pleadings filed with this Board.⁴⁴⁶ As such, we give minimal weight to Ms. Greene’s testimony based on these interviews. Moreover, to the degree her testimony accurately captures the circumstances at any particular facility, that likely reveals

⁴⁴² Simms Direct Testimony at 1-4 (CLE000006). Mr. Simms indicated that he did not know whether there are any income criteria for living at Bethel Springvale Inn, but that he thinks that the “average person” there “is at least middle class.” *Id.* at 2; *see also* Oct. 23, 2012 Tr. at 2852:2-3 (Simms) (“[I]t’s true, we’re not what you would call low-income.”) Thus, it is clear to the Board that his testimony does not identify any environmental justice concerns as it does not relate to any recognized environmental justice population.

⁴⁴³ *See, e.g., Toys “R” Us, Inc. v. Canarsie Kiddie Shop, Inc.*, 559 F. Supp. 1189, 1205 (E.D.N.Y. 1983).

⁴⁴⁴ Hudson River Sloop Clearwater, Emergency Evacuation Interview Questions (2011) (CLE000033).

⁴⁴⁵ Greene Rebuttal Testimony at 7 (CLE000046).

⁴⁴⁶ *Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 & 3), CLI-08-29, 68 NRC 899, 900 (2008).

only an isolated, anecdotal circumstance that is beyond the capacity of any environmental justice analysis to address.

186. In contrast to Ms. Greene’s and Mr. Simms’s highly limited testimony as to a lack of facility readiness, New York State regulations require that nursing homes and hospitals have comprehensive, biennially-updated written emergency and disaster preparedness plans.⁴⁴⁷ In accordance with those requirements, Rockland and Westchester County emergency plans account for nursing homes, hospitals, and other “special facilities” in the event of a severe accident.⁴⁴⁸ Specifically, those plans provide for transportation and planning assistance for these facilities,⁴⁴⁹ and as previously noted, county governments have letters of agreement with bus and ambulance services to enable evacuations, if necessary.⁴⁵⁰

187. Based on this evidence, the Board finds that Clearwater’s concerns regarding nursing home residents and hospital patients are unfounded. State and county plans specifically accommodate the needs of these populations, and Clearwater’s specific evidence on this matter is insufficient to raise serious questions about whether those requirements are in fact met. The Board thus finds that nursing home residents and hospital patients would not suffer disproportionately significant and adverse impacts in the event of a severe accident.

8. Spanish-Speaking Populations

188. Ms. Greene and Ms. Guardado testified that Spanish-speaking persons who cannot understand enough English to comprehend instructions may also be at a major

⁴⁴⁷ 10 NYCRR § 405.24 (g) (ENT000292), 10 NYCRR § 702.7 (ENT000293).

⁴⁴⁸ See Rockland REPP, Procedure EC-1, Attach. 2, at 12 (ENT00286B); Westchester REPP at I-10 (ENT00285A).

⁴⁴⁹ See Rockland REPP at III-35 (ENT00286A); Westchester REPP, Implementation Procedure 10.0, at 3 (ENT00285D); *id.* at Implementation Procedure 16.0, 9-10 (ENT00285D).

⁴⁵⁰ Oct. 23, 2012 Tr. at 2915:20-2916:6 (Slobodien).

disadvantage in an evacuation.⁴⁵¹ As such, Clearwater claims that such persons are more likely to suffer high and adverse environmental impacts in the event of a severe accident.⁴⁵²

189. As Mr. Slobodien testified, Indian Point emergency plans specifically accommodate the unique needs of Spanish-speaking populations.⁴⁵³ For example, Westchester County conducts public outreach and information programs for Spanish-speaking communities.⁴⁵⁴ Westchester County also maintains an ongoing working relationship with the news media, including those that serve Spanish-speaking communities for purposes of emergency planning.⁴⁵⁵ The Westchester County Community Emergency Planning for Indian Point booklet is available in Spanish on the county website and, in the event of a severe accident, informational materials distributed at the county's evacuee reception centers would also be available in Spanish.⁴⁵⁶

190. Based on this evidence, we find that Clearwater's concerns regarding Spanish-speaking populations are unfounded. State and county plans specifically accommodate the needs of these populations. The Board thus finds that such populations would not suffer disproportionately significant and adverse impacts in the event of a severe accident.

⁴⁵¹ Guardado Direct Testimony at 5 (A17-18) (CLE000008); Greene Rebuttal Testimony at 6 (A19) (CLE000046).

⁴⁵² Clearwater Rebuttal Position Statement at 27 (CLE000045).

⁴⁵³ Entergy Direct Testimony at 59, 69 (ENT000258); Oct. 23, 2012 Tr. at 2881:4-2884:4 (Slobodien).

⁴⁵⁴ Westchester REPP, Implementation Procedure 10.0, § 3.10 (ENT00285D).

⁴⁵⁵ *Id.*

⁴⁵⁶ Westchester County Indian Point Emergency Guide (Spanish Translation) (ENT000296); Westchester REPP, Implementation Procedure 10.0, at § 3.10 (ENT00285D).

9. Day-Care and Head Start Centers

191. Based on Clearwater’s interviews, Ms. Greene testified that evacuation of day care centers and Head Start programs would be difficult.⁴⁵⁷ According to Clearwater, these difficulties present a risk for high and adverse impacts.

192. We note that the New York State Office of Children and Family Services (“OCFS”) registers, licenses, and oversees day care centers, family day care homes, group family day care homes, school-age child care programs, nursery schools, pre-kindergartens, and Head Start centers (which are targeted for preschool-age children from low-income families).⁴⁵⁸ Every facility under OCFS control is required to have an emergency plan.⁴⁵⁹ Mr. Slobodien testified that these plans accommodate any unique protective action needs for such facilities and provide additional support for the conclusion that a severe accident would not result in disproportionately high and adverse human health and environmental effects on minority and low-income populations.⁴⁶⁰ To the extent Clearwater is asserting that the day care centers and head start programs discussed are not complying with OCFS regulations, such a claim need not be considered under NEPA as it turns on an impact that, itself, depends on a violation of law.⁴⁶¹ Moreover, even if the claim does not fail for that general reason, Clearwater’s evidence fails to establish that any such violations are sufficiently wide-spread to require their systematic analysis in a NEPA review.

⁴⁵⁷ See Greene Direct Testimony at 6-13 (A10-52) (CLE000010).

⁴⁵⁸ See NY CLS Social Service § 390(2-a)(a) (ENT000281).

⁴⁵⁹ See 18 NYCRR § 414.5(b) (ENT000297)

⁴⁶⁰ Entergy Testimony at 60-61 (A76-77) (ENT000258).

⁴⁶¹ See *Metro. Edison*, 460 U.S. at 776-77; *Glass Packaging Inst. v. Regan*, 737 F.2d 1083, 1091-94 (D.C. Cir. 1984).

193. Based on this record, the Board finds that children in day-care and head-start centers would not suffer disproportionately significant and adverse impacts in the event of a severe accident. Clearwater’s claim to the contrary is speculative, directly contrary to the opinions of Entergy’s and NRC Staff’s qualified emergency planning experts and to the evidence introduced in this proceeding.

* * * *

194. In light of the foregoing, the Board finds that New York State and county emergency plans specifically consider and account for special facility residents (*e.g.*, prisons, nursing homes, hospitals, and schools) for purposes of accommodating any unique protective action needs. Similarly, these plans also accommodate unique needs for transit-dependent and Spanish-speaking populations. The Board therefore finds that a severe accident at Indian Point would not result in any significant and disproportionate adverse impacts on minority and low-income populations.

F. The FSEIS Need Not Consider Emergency Planning Improvements as “Mitigation”

195. According to Clearwater and its witnesses, the FSEIS should have considered emergency planning “improvements” as additional or alternative severe accident mitigation measures.⁴⁶² Clearwater’s witnesses provided extensive written and oral testimony on their suggested mitigation measures to reduce any impacts to environmental justice populations. With regard to Sing Sing and other correctional facilities, those suggestions included improving the capacity to shelter-in-place and evacuate; improving backup generators to run critical systems; providing onsite dose measurement equipment; and improving human response by doing regular

⁴⁶² Clearwater Position Statement at 31 (CLE000002); Clearwater Rebuttal Position Statement at 24 (CLE000045).

training of both prison staff and inmates.⁴⁶³ More generally, Clearwater’s mitigation suggestions included conducting evacuation drills and education in Spanish;⁴⁶⁴ providing hospitals with more resources for evacuation of non-ambulatory patients; making Indian Point as safe as possible to minimize the risk of an accident;⁴⁶⁵ performing outreach to private day-care facilities to ensure they have potassium iodide on hand and workable evacuation plans;⁴⁶⁶ investing in public emergency transportation; and improving the shelter-in-place protective action by using existing civilian defense structures.⁴⁶⁷

196. Entergy and the NRC Staff both responded that the FSEIS need not consider any mitigation measures to reduce a severe accident’s impact on environmental justice populations because: (1) the probability-weighted consequences of severe accidents are SMALL and therefore are not disproportionately high and adverse to environmental justice populations; and (2) the FSEIS already considers SAMAs and Clearwater has not challenged that evaluation.⁴⁶⁸

197. The Board agrees with Entergy and the NRC Staff, and holds that Clearwater has not substantiated its claim that NEPA requires some additional discussion of severe accident mitigation. NEPA requires that possible mitigation measures “be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.”⁴⁶⁹ As discussed in the

⁴⁶³ CLE000012 at 30-32, 40-48; Oct. 23, 2011 Tr. at 2801:2-23 (Edelstein) (discussing potential mitigation measures for Sing Sing); Papa Direct Testimony at 5 (A17) (CLE000004).

⁴⁶⁴ Guardado Direct Testimony at 6 (A19) (CLE000008).

⁴⁶⁵ Larsen Direct Testimony at 3 (A9) (CLE000005).

⁴⁶⁶ Clearwater Position Statement at 32 (CLE000002).

⁴⁶⁷ Oct. 23, 2011 Tr. at 2834:7-2836:14 (Mair).

⁴⁶⁸ Entergy Position Statement at 37-39 (ENT000257); NRC Staff Position Statement at 15-16 (NRC000062); *see also* NRC Staff Testimony at 17 (NRC000063) (“Since it was determined that the impacts of license renewal would not be disproportionately high and adverse to minority and low-income populations, mitigation is not required.”).

⁴⁶⁹ *City of Carmel-by-the-Sea v. U.S. Dep’t of Transp.*, 123 F.3d 1142, 1154 (9th Cir. 1997); *see also Hydro Res., Inc.* (P.O. Box 777, Crownpoint, NM 87313), CLI-06-29, 64 NRC 417, 426 (2006) (“The purpose of addressing possible mitigation measures in an FEIS is to ensure that the agency has taken a ‘hard look’ at the

preceding sections of this Decision, a severe accident at Indian Point would result in SMALL probability-weighted impacts to minority and low-income populations. As such, there is no need for the FSEIS to consider emergency planning “improvements” as additional or alternative mitigation measures for severe accidents, as suggested by Clearwater. As the D.C. Circuit has held, an agency may decline to discuss mitigation measures when it believes an action’s environmental impact will be minor.⁴⁷⁰ Thus, NEPA requires no further consideration of severe accident mitigation here.

198. The Board also notes that all of Clearwater’s proposed “mitigation” measures amount to assertions that existing emergency planning measures are inadequate. Such challenges—even if presented in connection with a NEPA mitigation claim—are prohibited by the regulations governing this proceeding’s scope, regulations which prohibit using this proceeding to challenge emergency planning.⁴⁷¹ In any event, existing emergency plans already provide reasonable assurance that appropriate protective measures would be taken for all members of the public in the event of a severe accident.⁴⁷² Thus, any further consideration of emergency planning improvements as part of this proceeding appears pointless.⁴⁷³

potential environmental impacts of a proposed action. An EIS therefore must address mitigation measures ‘in sufficient detail to ensure that environmental consequences have been fairly evaluated.’”) (citations omitted).

⁴⁷⁰ See *Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667, 737 (D.C. Cir. 2000) (upholding agency’s decision to “decline to adopt mitigation measures to address a problem that it believed might not even develop”).

⁴⁷¹ *Indian Point*, LBP-08-13, 68 NRC at 149; see also *Pilgrim*, CLI-10-11, 71 NRC at 302.

⁴⁷² Even if some additional consideration of mitigation was necessary, the Board cannot find the FSEIS inappropriately omitted consideration of any relevant mitigation measures because Clearwater’s witnesses have not conducted any assessments or provided any information estimating whether the emergency planning improvements discussed by Clearwater’s witnesses are cost-beneficial severe accident mitigation alternatives. See *Pilgrim*, CLI-12-15, slip op. at 27.

⁴⁷³ As the preceding section of this Decision demonstrates, New York State and county emergency plans largely address all of Clearwater’s concerns.

199. Finally, it bears emphasis that the FSEIS already extensively considers severe accident mitigation in the SAMA evaluation, an evaluation on which Clearwater did not proffer an admissible contention. NEPA requires a reasonably complete discussion of possible mitigation measures,⁴⁷⁴ but gives agencies discretion as to how to meet this mandate.⁴⁷⁵ In exercising that discretion, the Commission has limited the scope of severe accident mitigation analysis under NEPA to focus on SAMAs—*i.e.*, plant modifications or operational changes that could reduce the already-low risk of a severe accident.⁴⁷⁶ The Board finds nothing unreasonable with that decision. Accordingly, the Board finds that the FSEIS considers severe accident mitigation to the extent required by NRC regulations and NEPA.

V. SUMMARY OF FINDINGS OF FACT AND CONCLUSIONS OF LAW

200. Based upon a review of the entire record of this proceeding and the proposed findings of fact and conclusions of law submitted by the parties, and based upon the findings set forth above, which are supported by reliable, probative, and substantive evidence in the record, the Board has decided all matters in controversy on CW-EC-3A and reaches the following conclusions that supplement the foregoing detailed findings and conclusions.

201. The FSEIS reasonably and appropriately identifies minority and low-income populations within a 50-mile radius of Indian Point. The FSEIS properly uses census Block Group data to identify and disclose minority and low-income populations within a 50-mile radius of Indian Point. Using census Block Group data is fully consistent with NRC guidance and NEPA's "hard look" requirement. In turn, because such census data specifically includes

⁴⁷⁴ *Robertson*, 490 U.S. at 352.

⁴⁷⁵ *Sierra Club v. U.S. Dep't of Transp.*, 753 F.2d 120, 128 (D.C. Cir. 1985) (citing *Ethyl Corp. v. EPA*, 541 F.2d 1, 12 & n. 16 (D.C. Cir. 1976)).

⁴⁷⁶ *See* Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. at 28,481 (NYS000127).

information about all populations, the populations inside correctional facilities and other institutions are inherently evaluated. Accordingly, the FSEIS properly identifies and accounts for environmental justice populations at those facilities and elsewhere.

202. Clearwater's asserted disproportionate impact claim is contrary to NRC regulations and to the GEIS conclusion that for all plants, the probability-weighted consequences of severe accidents are SMALL. The GEIS conclusion applies to all populations, including minority or low-income and whether populations evacuate or shelter-in-place. Even if Clearwater were permitted to challenge the generic conclusion that severe accident risks are SMALL, Clearwater has not presented sufficient evidence to cast doubt on that conclusion as it relates to environmental justice populations relevant to Indian Point. Therefore, the Board finds that the FSEIS reasonably adopts the GEIS finding in determining that environmental justice populations would not suffer significant and adverse disproportionate impacts in the event of a severe accident at Indian Point.

203. Rather than providing a critique within the bounds of NEPA and NRC regulations, the vast majority of Clearwater's testimony directly challenged Indian Point emergency and evacuation plans, and those of the surrounding government jurisdictions, and thus is outside the scope of CW-EC-3A and this proceeding. Nevertheless, the Board finds that Indian Point, state, and local emergency plans have been demonstrated, and approved by FEMA, to provide reasonable assurance that appropriate protective measures would be taken for all members of the public in the event of a severe accident, including environmental justice populations. This finding is not subject to review in this proceeding, although even if it were, the evidence in this proceeding provided no substantial basis to conclude the plans would not work as described, and the evidence further demonstrated that these emergency plans specifically

consider special facility residents (*e.g.*, prisons, nursing homes, hospitals, schools) for purposes of accommodating any unique protective action needs. Similarly, these plans also accommodate unique needs for transit-dependent and Spanish-speaking populations.

204. Finally, the Board finds that the FSEIS need not consider emergency planning improvements as “mitigation” because the record in this proceeding shows that a severe accident at Indian Point would result in SMALL probability-weighted impacts to minority and low-income populations, and, in any event, existing emergency plans already provide reasonable assurance that appropriate protective measures would be taken for all members of the public in the event of a severe accident.

205. In summary, the preponderance of the evidence shows that the SMALL risk posed by severe accidents impacts will not disproportionately and significantly impact environmental justice populations. The Board thus finds that the NRC Staff and Entergy carried their respective burdens of proof, and that, based on the entire record of this proceeding, the NRC Staff has satisfied its NEPA obligations under 10 C.F.R. Part 51. Issues, motions, and arguments presented by the parties but not addressed herein have been found to be without merit, unnecessary, or not relevant to the Board’s findings on CW-EC-3A.

VI. ORDER

WHEREFORE, IT IS ORDERED, pursuant to 10 C.F.R. §§ 2.1210 and 51.104(a)(3), that the Clearwater’s Contention CW-EC-3A is resolved on the merits in favor of the NRC Staff and Entergy.

IT IS FURTHER ORDERED, this Partial Initial Decision will constitute a final decision of the Commission forty (40) days from the date of issuance (or the first agency business day following that date if it is a Saturday, Sunday, or federal holiday, *see* 10 C.F.R. § 2.306(a)),

unless a petition for review is filed in accordance with 10 C.F.R. § 2.1212, or the Commission directs otherwise.

IT IS FURTHER ORDERED that any party wishing to file a petition for review on the grounds specified in 10 C.F.R. § 2.341(b)(1) must do so within twenty-five (25) days after service of this Partial Initial Decision. The filing of a petition for review is mandatory for a party to have exhausted its administrative remedies before seeking judicial review. Within twenty-five (25) days after service of a petition for review, parties to the proceeding may file an answer supporting or opposing Commission review. Any petition for review and any answer shall conform to the requirements of 10 C.F.R. § 2.341(b)(2)-(3).

Although this ruling resolves all matters before the Board in connection with Contention CW-EC-3A, NRC Staff issuance of the renewed operating licenses under 10 C.F.R. Part 54 must abide, among other things, the resolution of the remaining admitted contentions, including those contentions designated for future hearings.

Respectfully submitted,

Executed in Accord with 10 C.F.R. § 2.304(d)

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COUNSEL FOR ENTERGY NUCLEAR
OPERATIONS, INC.

Dated in Washington, D.C.
this 22nd day of March 2013

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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))	
)	March 22, 2013

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305 (as revised), I certify that, on this date, copies of “Entergy’s Proposed Findings of Fact and Conclusions of Law For Contention CW-EC-3A (Environmental Justice)” were served upon the Electronic Information Exchange (the NRC’s E-Filing System), in the above-captioned proceeding.

Signed (electronically) by Lance A. Escher

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