

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

_____)	Docket Nos. 50-247-LR and
In the Matter of)	50-286-LR
ENTERGY NUCLEAR OPERATIONS, INC.)	
(Indian Point Nuclear Generating Units 2 and 3))	
_____)	March 29, 2012

**TESTIMONY OF ENERGENCY WITNESSES DONALD P. CLEARY, JERRY L. RIGGS,
AND MICHAEL J. SLOBODIEN REGARDING
CONTENTION CW-EC-3A (ENVIRONMENTAL JUSTICE)**

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I. WITNESS BACKGROUND

A. Donald P. Cleary (“DPC”)

Q1. Please state your full name.

A1. (DPC) My name is Donald P. Cleary.

Q2. By whom are you employed and what is your position?

A2. (DPC) I am an Environmental Safety Consultant with Talisman International, LLC.

Q3. Please describe your educational and professional qualifications, including relevant professional activities.

A3. (DPC) My qualifications are summarized in the attached *curriculum vitae* (ENT000133). Briefly, I hold a Bachelor of Arts degree in Economics from the University of Massachusetts, Amherst, a Master of Arts degree in Economics from the University of Florida, and have taken additional graduate courses in Natural Resource Economics and Policy at the University of Michigan. I have 38 years of experience in the nuclear regulation industry. Since 2001, I have provided consulting services in the areas of environmental impacts, power and

alternate energy sources, and regional socioeconomic impacts. Prior to joining Talisman, I was a member of the U.S. Nuclear Regulatory Commission regulatory staff (“NRC Staff”) from 1973 to 2001.

During my time with the NRC, I had a lead role in developing and applying methodologies to assess various topics covered in environmental impact statements for nuclear power plant construction and operation, including such topics as the need for power (electrical generating capacity), alternative energy sources, and regional socioeconomic impacts. I also played a key role in assessing severe accident socioeconomic impacts after the Three Mile Island Unit 2 (“TMI-2”) accident.

Of particular relevance here, as NRC Section Leader of the Regional Impact Analysis Section, I oversaw the Staff review of socioeconomic impacts in licensing nuclear power plants. Further, I oversaw the development of research projects to better understand nuclear power plant construction and operation socioeconomic impacts in order to better focus licensing reviews and support environmental impact statements. These projects included a major study of nuclear power plant construction and operation socioeconomic impacts. That study was published in 1982 as NUREG/CR-2749, “Socioeconomic Impacts of Nuclear Generating Stations.” NUREG/CR-2749 was a twelve volume series, one volume for each of twelve nuclear generating stations studied, that covered socioeconomic topics such as employment, housing, land use patterns, and taxes.

Furthermore, as Task Manager for NUREG-1437, the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (May 1996) (“GEIS”) (NYS00131A-I), and the license renewal rulemaking, I was directly involved in license renewal environmental impact studies addressing socioeconomics, environmental justice, and environmental impacts of

postulated accidents. I also managed several rulemakings, and the writing of technical and policy papers related to reactor license renewal.

Additionally, while at the NRC, I also developed an in-house training unit, “Compliance with the National Environmental Policy Act in U.S. Nuclear Regulatory Commission Rulemaking and Licensing” and, with participation from the NRC Office of General Counsel and the Environmental Protection Agency (“EPA”), led periodic training sessions. During 1995 and 1996, I taught a course titled, “Environmental Policy Making” in a Master degree program at Johns Hopkins University.

As a teacher of environmental policy and as a practitioner of environmental impact analysis, I observed the emergence of the environmental justice movement, which led to Executive Order 12898 of February 11, 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629 (Feb. 16, 1994) (“Executive Order 12898”) (ENT000259). As the Manager for the NRC rulemaking addressing the environmental reviews for renewal of nuclear power plant operating licenses, I closely followed deliberations within the NRC as to how the agency would address the Executive Order as part of its compliance with the National Environmental Policy Act (“NEPA”). Thus, I am very familiar with the NRC’s requirements and guidance on the treatment of environmental justice in nuclear power plant license renewal reviews. The major documents articulating the NRC’s requirements and guidance include the Commission’s environmental protection regulations in 10 C.F.R. Part 51; the Commission’s Final Policy Statement; Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions, 69 Fed. Reg. 52,040 (Aug. 24, 2004) (“NRC Environmental Justice Policy Statement”) (ENT000260), and NRC Staff Office of Nuclear Reactor Regulation (“NRR”) Office Instruction,

LIC-203, Rev. 1, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues (May 24, 2004) (“LIC-203, Rev. 1”) (ENT000261).

Q4. Please describe the basis for your familiarity with Indian Point Energy Center (“IPEC” or “Indian Point”), and the Indian Point Nuclear Generating Units 2 and 3 (“IP2” and “IP3,” respectively) license renewal project, including the associated license renewal application, environmental report, and environmental impact statement.

A4. (DPC) My initial familiarity with Indian Point began when I was a member of the NRC Staff team reviewing alternative closed-cycle cooling systems in the 1970s. As part of that review, I evaluated information on the site and vicinity and participated in an intensive site visit, which included meetings with local and county officials.

More recently, I have been retained by Entergy Nuclear Operations Inc. (“Entergy”) as an expert in connection with the adjudication of several contentions in this proceeding, including Hudson River Sloop Clearwater Inc. (“Clearwater”) Contention CW-EC-3/CW-EC-3A (“CW-EC-3A”), NYS-17B, and NYS-37. In preparing my testimony, I reviewed the parties’ pleadings on CW-EC-3A; the Atomic Safety and Licensing Board (“Board”) orders on CW-EC-3A; the demographic and environmental justice information in Entergy’s Environmental Report (“ER”) (ENT00015B) and in the NRC Staff’s Final Supplemental Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3 (Dec. 2010) (“FSEIS”) (NYS00133A-D); and the accident-related analyses in the NRC Staff’s FSEIS and the license renewal GEIS (NYS00131A-I).

B. Jerry L. Riggs (“JLR”)

Q5. Please state your full name.

A5. (JLR) My name is Jerry L. Riggs.

Q6. By whom are you employed and what is your position?

A6. (JLR) I am employed as a Geographic Information System (“GIS”) Specialist by Enercon Services, Inc.

Q7. Please describe your educational and professional qualifications, including relevant professional activities.

A7. (JLR) My qualifications are summarized in the attached *curriculum vitae* (ENT000008). Briefly, I hold a Master of Arts degree in Geography from the University of Oklahoma with an emphasis in Digital Geography including GIS and Remote Sensing. I also have a Bachelor of Science degree in Biochemistry from the University of Oklahoma. As a GIS Specialist at Enercon, I am responsible for assisting in developing combined license applications, license renewal applications, research and development of geographical information system (“GIS”) operating procedures, demographic analysis, environmental justice analysis, socioeconomic impact analysis, mapping and spatial analysis, global positioning system data mapping, and project coordination. During my tenure at Enercon, I have performed environmental justice analyses for a number of license applications.

I also have conducted extensive literature reviews on various socioeconomic subjects, including environmental justice. Thus, based on my experience, I am very familiar with the NRC’s environmental regulations in 10 C.F.R. Part 51, and NRC’s guidance on conducting environmental justice reviews, including NRC’s Environmental Justice Policy Statement (ENT000260) and LIC-203, Rev. 1 (ENT000261).

Q8. Please describe the basis for your familiarity with Indian Point, and the IP2 and IP3 license renewal project, including the associated license renewal application, environmental report, and environmental impact statement.

A8. (JLR) In my capacity as a GIS Specialist at Enercon, I was directly involved in preparing the Indian Point ER, including developing demographic information needed to identify minority and low-income populations near Indian Point. I have also been retained by Entergy as an expert in connection with the hearing on CW-EC-3A. In preparing my testimony, I reviewed the parties' pleadings on CW-EC-3A; the Board orders on CW-EC-3A; and the demographic and environmental justice information in Entergy's ER (ENT00015B) and in the NRC's FSEIS (NYS00133A-D).

C. Michael J. Slobodien ("MJS")

Q9. Please state your full name.

A9. (MJS) My name is Michael J. Slobodien.

Q10. By whom are you employed and what is your position?

A10. (MJS) I am employed by Entergy as the Director of Emergency Planning for fleet operations, including Indian Point.

Q11. Please describe your educational and professional qualifications, including relevant professional activities.

A11. (MJS) My qualifications are summarized in the attached *curriculum vitae* (ENT000262). Briefly, I hold 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. I am certified in the Comprehensive Practice of Health Physics by the American Board of Health Physics and am a Diplomat of the American Academy of Health Physics.

I have more than 40 years of professional experience in occupational and public radiation safety and health. As Entergy's Director of Emergency Planning, I direct and manage onsite and offsite emergency planning for Entergy's nuclear power reactor fleet. Specifically, my responsibilities require: assessing program design and content, facilities, infrastructure, equipment, training, drills, and exercises; interfacing with federal agencies including the Federal Emergency Management Agency ("FEMA"), NRC, EPA, U.S. Department of Homeland Security ("DHS"); and supporting offsite response agencies at local and state levels for the states of New York, Massachusetts, Vermont, New Hampshire, Michigan, Arkansas, Louisiana, and Mississippi.

Q12. Please describe the basis for your familiarity with Indian Point, the IP2 and IP3 license renewal project, and Indian Point emergency plans.

A12. (MJS) As Entergy's Director of Emergency Planning, I am responsible for emergency planning program design and conduct to ensure compliance with applicable federal regulations in Title 10 of the Code of Federal Regulations (NRC) and Title 44 of the Code of Federal Regulations (FEMA). These responsibilities include selecting, qualifying, and training professional emergency planning staff; maintaining facilities and infrastructure; preparing policies, plans, and procedures; conducting drills and exercises to ensure compliance with NRC and FEMA/DHS requirements; and interfacing with off-Site response organizations. Based on this experience, I am very familiar with Indian Point emergency plans, as well as state and local emergency response plans, and applicable federal regulations and guidance pertaining to protecting the public in the event of an Indian Point radiological emergency. In preparing my testimony, I also reviewed the parties' pleadings on CW-EC-3A, the Board orders on CW-EC-3A, the demographic and environmental justice information in Entergy's ER (ENT00015B), and

in the NRC's FSEIS (NYS00133A-D), and the accident-related analyses in the NRC's FSEIS and GEIS.

II. OVERVIEW OF CONTENTION CW-EC-3A

Q13. Are you familiar with Contention CW-EC-3, as originally proposed by Clearwater?

A13. (DPC, JLR, MJS) Yes. We have reviewed the relevant pleadings in this proceeding concerning Contention CW-EC-3, including the applicable portions of "Hudson River Sloop Clearwater Inc.'s Petition to Intervene and Request for Hearing," dated December 10, 2007 ("Clearwater Petition") (CLE000043). Briefly, as originally proposed, CW-EC-3 alleged that Entergy's ER contains a flawed environmental justice analysis that does not adequately assess the impacts of Indian Point license renewal on minority, low-income, and disabled populations surrounding Indian Point. Clearwater Petition at 31 (CLE000043). More specifically, Clearwater claimed that Entergy's environmental justice methodology is flawed because Entergy did not present raw data for the total minority and low-income populations, and because Entergy used census *Block Groups* rather than census *Blocks* to identify minority and low-income populations. *See* Clearwater Petition at 36-37 (CLE000043).

Clearwater also originally made the following claims concerning purported disproportionate impacts: (1) cancer rates in the area surrounding Indian Point exceed the national average, which Clearwater attributed to radionuclide emissions; (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; (3) minority and low-income populations confined to prisons, hospitals, and other nearby institutions would be disproportionately harmed in the event of a "significant accident" at Indian Point due to challenges evacuating these populations; and (4) Native American populations would be

disproportionately impacted by the production, use, and storage of Indian Point nuclear fuel. *See* Clearwater Petition at 41-55 (CLE000043).

With respect to its third claim, Clearwater stated that there are at least twenty-six correctional facilities within a 50-mile radius of Indian Point and that the majority of the prisoners within these facilities are minority and indigent. *See* Clearwater Petition at 48-49 (CLE000043). Clearwater claimed that a 2003 report entitled “Review of Emergency Preparedness of Area Adjacent to Indian Point and Millstone” by James Lee Witt Associates (“Witt Report”) (ENT000263), suggests two of these correctional facilities—Sing Sing, which is 9.3 miles from Indian Point and within the 10-mile plume exposure pathway emergency planning zone (“10-mile EPZ”), and the Westchester Department of Corrections Facility, which is approximately 17 miles from Indian Point—would likely shelter-in-place rather than evacuate if there were an accident at Indian Point. Clearwater Petition at 50-51 (CLE000043).

In addition, relying on a statement in the Witt Report, Clearwater further claimed there are numerous “special facilities” within the 50-mile radius around Indian Point, and alleged that evacuation of the minority, low-income, and disabled populations within these facilities would be extremely problematic. Clearwater Petition at 51-52 (CLE000043). To support its evacuation claim, Clearwater relied on reports discussing problems with evacuations in Louisiana during Hurricane Katrina. *See* Clearwater Petition at 47-48, 52-53 (CLE000043). Clearwater also maintained that New York State Contention 29, which challenged the adequacy of Indian Point emergency plans, provided additional support for this contention. *See* Clearwater Petition at 48 (CLE000043).

Q14. Are you familiar with Contention CW-EC-3, as admitted by the Board on July 31, 2008?

A14. (DPC, JLR, MJS) Yes. In ruling on the admissibility of CW-EC-3, the Board rejected Clearwater's claims involving alleged disproportionate impacts on environmental justice populations that relied on cancer rate and subsistence fishing allegations. *See Entergy Nuclear Operations, Inc.* (Indian Point Nuclear Generating Units 2 & 3), LBP-08-13, 68 NRC 43, 200 (2008). The Board did not specifically discuss Clearwater's claim regarding nuclear fuel cycle impacts on Native American communities, an issue outside the scope of CW-EC-3 pursuant to Commission regulations. *See* 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1 (designating all "Uranium Fuel Cycle and Waste Management" as generic, Category 1 issues). Ultimately, the Board made it clear that it admitted the contention only with respect to Clearwater's argument that the environmental justice evaluation allegedly does not address purported disparate impacts on minority and low-income populations in nearby institutions. *Indian Point*, LBP-08-13, 68 NRC at 200-01. Namely, in admitting this part of the contention, the Board focused on the fact that:

Clearwater identifies Sing Sing, a maximum security correctional facility located less than 10 miles from Indian Point that houses more than 1,750 predominately minority inmates. Clearwater also identifies twenty-five other prisons and jails located within 50 miles of Indian Point. Clearwater then contends that Entergy's ER is deficient because it does not address the impact of a severe accident at Indian Point on these EJ populations.

LBP-08-13, 68 NRC at 200 (citations omitted).

The Board further stated that the issue remaining is whether there is "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.'" LBP-08-13, 68 NRC at 201. In

this regard, the Board emphasized that CW-EC-3 is an environmental contention brought under NEPA and not a safety contention claiming that Entergy's emergency plan is deficient. LBP-08-13, 68 NRC at 201. Notably, for purposes of understanding the contention's scope, the Board also rejected several other contentions raising emergency preparedness and evacuation planning issues (including New York State Contention 29, which Clearwater indicated provided additional support for CW-EC-3), holding that emergency planning issues, including evacuation issues, are outside the scope of this license renewal proceeding. *See* LBP-08-13, 68 NRC at 149-150, 165-166.

Q15. Are you also familiar with Contention CW-EC-3A, as originally proposed by Clearwater?

A15. (DPC, JLR, MJS) Yes. We also have reviewed the relevant pleadings concerning CW-EC-3A, including Clearwater's "Motion for Leave to Amend and Extend Contention EC-3 Regarding Environmental Justice and Petition to Do So," dated February 3, 2011 ("Clearwater Contention CW-EC-3A Motion"), *available at* ADAMS Accession No. ML110410369, and Clearwater's "Combined Reply to NRC Staff and Entergy's Answers in Opposition to Clearwater's Motion for Leave and Petition to Amend Contention EC-3," dated March 21, 2011 ("Clearwater Contention CW-EC-3A Reply"), *available at* ADAMS Accession No. ML11108A106. Clearwater framed CW-EC-3A as a "technical change" to the previously-admitted contention, in that it claims the FSEIS environmental justice discussion is deficient for the same reasons the ER discussion was deficient; namely, its failure to look at the alleged impact on environmental justice populations resulting from asserted emergency planning defects in the event of a severe accident. *See* Clearwater Contention CW-EC-3A Motion at 3, 16, 19.

Clearwater also sought to expand its original contention to claim that the FSEIS “assessment of the impact of the no-action alternative on potentially affected environmental justice populations is inadequate” and also that the FSEIS “assessment of the impact of adding closed cycle cooling on air quality and on potentially affected local environmental justice populations is inadequate.” Clearwater Contention CW-EC-3A Motion at 16.

Q16. Are you familiar with Contention CW-EC-3A, as admitted by the Board on July 6, 2011?

A16. (DPC, JLR, MJS) Yes. In ruling on the admissibility of CW-EC-3A, the Board rejected Clearwater’s claims involving both the no-action and closed-cycle cooling alternatives, finding that Clearwater failed to meet minimal pleading requirements. Licensing Board Memorandum and Order (Ruling on Pending Motions for Leave to File New and Amended Contentions) at 59-60 (July 6, 2011) (unpublished) (“Board Amended Contention Order”). Thus, the Board admitted CW-EC-3A only with respect to whether the ER and FSEIS allegedly fail to address purported disparate impacts on environmental justice populations in nearby institutions in the event of a severe accident. *See* Board Amended Contention Order at 60.

Q17. Have you reviewed Clearwater’s initial written statement of position, prefiled direct testimony, and supporting exhibits concerning CW-EC-3A, as filed on December 22, 2011?

A17. (DPC, JLR, MJS) Yes. We have each individually reviewed the prefiled direct testimony of Dr. Edelstein, Mr. Papa, Dr. Larsen, Mr. Simms, Mr. Mair, Ms. Guardado, Mr. Filler, and Ms. Greene (CLE000003 through CLE000010) and other supporting exhibits. Our testimony fully addresses and refutes Clearwater’s specific concerns and arguments.

Q18. Have you reviewed other materials in preparation for your testimony?

A18. (DPC, JLR, MJS) Yes. We note at the outset that we cannot offer legal opinions on the language of the NRC regulations, orders, or related guidance, discussed in our testimony. However, reading statements therein as technical statements, and using our expertise, we can interpret what those statements mean for environmental justice, severe accident, and emergency planning evaluations.

Q19. What are the other materials you have reviewed?

A19. (DPC, JLR, MJS) Many are documents prepared by government agencies, peer-reviewed articles, or documents prepared by or for Entergy or the utility industry related to socioeconomic impacts. Documents include, for example, NRC, FEMA, and EPA regulations and guidance documents, the Indian Point license renewal application, NRC Staff's GEIS and Indian Point FSEIS, and state and county laws and emergency plans.

Q20. Please direct your attention to what has been marked as Exhibit ENT000001.

Do you recognize this document?

A20. (DPC, JLR, MJS) Yes. It is a list of Entergy's exhibits, and includes those documents which we referred to, used, or relied upon in preparing respective portions of our testimony, ENT000014, ENT0015B, ENT000259 through ENT000278, and ENT000280 through ENT000299.

Q21. Please direct your attention to what has been marked as ENT000014, ENT0015B, ENT000259 through ENT000278, and ENT000280 through ENT000299. Do you recognize these documents?

A21. (DPC, JLR, MJS) Yes. These are true and accurate copies of the documents that we have referred to, used and/or relied upon in preparing this testimony. Where we have attached only a document excerpt as an exhibit, that is noted on Entergy's exhibit list.

Q22. How do these documents relate to the work that you do as an expert in forming opinions such as those contained in this testimony?

A22. (DPC, JLR, MJS) These documents represent the type of information that persons within our respective fields of expertise reasonably rely upon in forming opinions of the type offered in this testimony.

III. SUMMARY OF DIRECT TESTIMONY AND CONCLUSIONS

Q23. What is the purpose of your testimony?

A23. (DPC, JLR, MJS) The purpose of our testimony is to explain why CW-EC-3A lacks merit, and why the NRC Staff's FSEIS properly identifies environmental justice populations and finds that such populations, including those in institutions, would not suffer disproportionately significant and adverse impacts in the event of a severe accident at Indian Point.

Q24. Please summarize the basis for your conclusion that the claims made by Clearwater and its proffered witnesses in CW-EC-3A do not have merit.

A24. (DPC, JLR, MJS) Section V of our testimony explains that Entergy, in the ER—and NRC Staff, in the FSEIS—properly identify and disclose minority and low-income populations within a 50-mile radius of Indian Point using census Block Group data, consistent with NRC guidance. Because such census data specifically include information about persons

residing in institutionalized Group Quarters, as that term is defined in the census data, the populations inside correctional institutions and other facilities are inherently evaluated as part of the ER and FSEIS. *See* Section V.D, below. Accordingly, the ER and the FSEIS properly identify minority and low-income populations that potentially could be impacted by a severe accident at Indian Point including populations in institutions such as prisons and hospitals.

The vast majority of Clearwater's testimony is a direct challenge to the adequacy of Indian Point emergency and evacuation plans, and thus is outside the scope of CW-EC-3A and this proceeding. Nevertheless, we address Clearwater's claim that minority and low-income populations would be disproportionately impacted (*i.e.*, suffer greater probability weighted consequences) in the event of a severe accident at Indian Point and show that it is without merit for several reasons.

First, as discussed in Section VI of this testimony, Clearwater's disproportionate impact claim is contrary to NRC regulations and to the GEIS conclusion that for all plants, the probability weighted consequences from severe accidents are small. As we explain, this conclusion applies to all populations and is not subject to challenge in individual licensing proceedings.

Second, as discussed in Section VII of this testimony, 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 radiological emergency, including any individuals in institutions such as prisons. Although emergency planning issues are not subject to review or challenge in this proceeding, we nevertheless demonstrate that these plans give specific consideration to special facility residents (*e.g.*, prisons, nursing homes, hospitals, schools) and accommodate their unique

protective action needs. *See generally* Section VII, below. Similarly, these plans also accommodate unique needs for transit-dependent and Spanish-speaking populations.

Finally, to the extent Clearwater believes that improvements to local emergency evacuation plans are needed to mitigate the impacts of severe accidents, such issues are beyond the scope of this proceeding.

IV. BACKGROUND ON ENVIRONMENTAL JUSTICE REVIEWS

Q25. Please summarize the NRC’s regulations and policy on the treatment of environmental justice matters.

A25. (DPC) Environmental justice refers to a federal policy established by Executive Order 12898 under which each federal agency identifies and addresses, as appropriate, potentially disproportionately high adverse human health or environmental effects of its programs, policies, and activities on minority or low-income populations. *See* Executive Order 12898, 59 Fed. Reg. at 7629 (ENT000259). This Executive Order established a federal executive agency working group to develop criteria for identifying disproportionately high and adverse human health or environmental effects on minority and low-income populations. *See* Executive Order 12898, 59 Fed. Reg. at 7629 (ENT000259). This Executive Order also stated that whenever practicable and appropriate, federal executive agencies “shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action.” Executive Order 12898, 59 Fed. Reg. at 7631 (ENT000259).

Independent agencies, such as the NRC, were requested to comply with the Executive Order. *See* Executive Order 12898, 59 Fed. Reg. at 7632 (ENT000259). In response, the NRC

voluntarily committed to undertake environmental justice reviews. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,041-42 (ENT000260). On August 24, 2004, the Commission issued its policy statement on the treatment of environmental justice matters in NRC licensing actions. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (“Policy Statement”) (ENT000260).

Executive Order 12898 and the NRC Environmental Justice Policy Statement both make clear that neither document establishes any new substantive or procedural requirements applicable to NRC regulatory or licensing activities. *See* Executive Order 12898, 59 Fed. Reg. at 7632-33 (ENT000259); NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (ENT000260). Environmental justice issues are considered only when and to the extent required by NEPA, as “NEPA is the only available statute under which the NRC can carry out the general goals of [Executive Order] 12898.” NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 n.2 (ENT000260).

NRC’s Environmental Justice Policy Statement also emphasizes that “[t]he focus of any ‘[environmental justice]’ review should be on 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.*” NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260) (emphasis added). If no significant adverse impacts to the general population are identified, then a detailed analysis of disparate impacts is not required unless there are unique characteristics associated with specific minority or low-income communities that might contribute to disproportionately significant adverse impacts to those communities. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg.

at 52,045-46 (ENT000260). In other words, the presence of a minority or low-income population alone is not sufficient to trigger a detailed environmental justice review.

The Commission also has emphasized that NEPA is not the appropriate context in which to assess racial motivation and fairness or equity issues. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,045 (ENT000260). As stated by the Commission in the Environmental Justice Policy Statement, “were 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.’” NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,045 (ENT000260) (*quoting La. Energy Servs., L.P.*, CLI-98-3, 47 NRC 77, 102-03 (1998) (*quoting Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 776 (1983))).

Q26. Please describe how the NRC applies its environmental justice policy in license renewal proceedings.

A26. (DPC) The NRC’s NEPA regulations are found in 10 C.F.R. Part 51. In 1996, the Commission amended Part 51 to make these procedures efficient and focused with respect to license renewal proceedings. *See* Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. 28,467 (June 5, 1996) (“License Renewal Environmental Review Rule”) (NYS000127), *amended by* 61 Fed. Reg. 66,537 (Dec. 18, 1996) (NYS000128). Namely, the NRC prepared the GEIS to evaluate and document those environmental impacts associated with license renewal that are well understood based on experience gained from the operation of the existing fleet of U.S. nuclear power plants. GEIS at

xxxii (NYS00131A). Based on the GEIS, the NRC divided the license renewal environmental requirements into generic and plant-specific components, codifying them in Part 51.

The GEIS, however, does not address environmental justice analyses because environmental justice implementing guidance was issued after the completion of the GEIS. As a result, Table B-1 in Part 51 indicates that “[t]he need for and the content” of an environmental justice analysis is addressed in application-specific reviews. 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-2. However, neither Executive Order 12898 nor the Policy Statement precludes the NRC Staff from relying on existing environmental analyses in the GEIS to satisfy its obligations under NEPA. *See* Executive Order 12898, 59 Fed. Reg. at 7631 (ENT000259) (indicating that, in carrying out the Executive Order, Federal agencies should “whenever practicable and appropriate . . . eliminate unnecessary duplication of efforts through the use of existing data”); *see also* 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.”).

Q27. Please describe the NRC’s guidance for conducting environmental justice reviews in license renewal proceedings.

A27. (DPC) Prior to the issuance of the NRC Environmental Justice Policy Statement, the NRC’s Office of Nuclear Reactor Regulation (“NRR”) developed environmental justice guidance (LIC-203) using the Council on Environmental Quality (“CEQ”) environmental justice guidance as the model. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,041-42 (ENT000260). The environmental justice guidance in LIC-203, Rev. 1 was then incorporated into the NRC Environmental Justice Policy Statement. *See* NRC Environmental

Justice Policy Statement, 69 Fed. Reg. at 52,041 (ENT000260). Thus, the NRC Environmental Justice Policy Statement incorporates NRC and CEQ guidance (as well as guidance from Commission and Federal court decisions) on environmental justice. *See* NRC Environmental Justice Policy Statement 69 Fed. Reg. at 52,041 (ENT000260). The NRC Staff subsequently updated LIC-203 to incorporate the Final Environmental Justice Policy Statement. LIC-203, Rev. 2, Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues at 2 (Feb. 17, 2009) (ENT000264). Because this revision was issued after the ER and DSEIS were prepared, this testimony cites to LIC-203, Rev. 1 (ENT000261), unless otherwise noted.

In accordance with LIC–203, Rev. 1, and the NRC’s Environmental Justice Policy Statement, the purpose of an environmental justice review is to determine whether a proposed action will have a disproportionately high and adverse impact on minority and low-income populations that differ from the impacts on the general population. 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. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260).

This review process focuses on identifying minority populations (*i.e.*, American Indian or Alaskan Native, Asian or Pacific Islander, Black, or Hispanic population groups) and low-income populations (*i.e.*, individuals exceeding annual statistical poverty thresholds). LIC-203, Rev. 1, at D-8 (ENT000261).

V. **IDENTIFICATION OF MINORITY OR LOW-INCOME POPULATIONS**

A. **NRC Guidance on Identifying Minority and Low-Income Populations**

Q28. Please identify and briefly describe the NRC's guidance on identifying minority and low-income populations for environmental justice reviews.

A28. (DPC, JLR) Appendix D of LIC-203, Rev. 1 (ENT000261) contains detailed guidance on screening for minority and low-income groups, and describes the following steps:

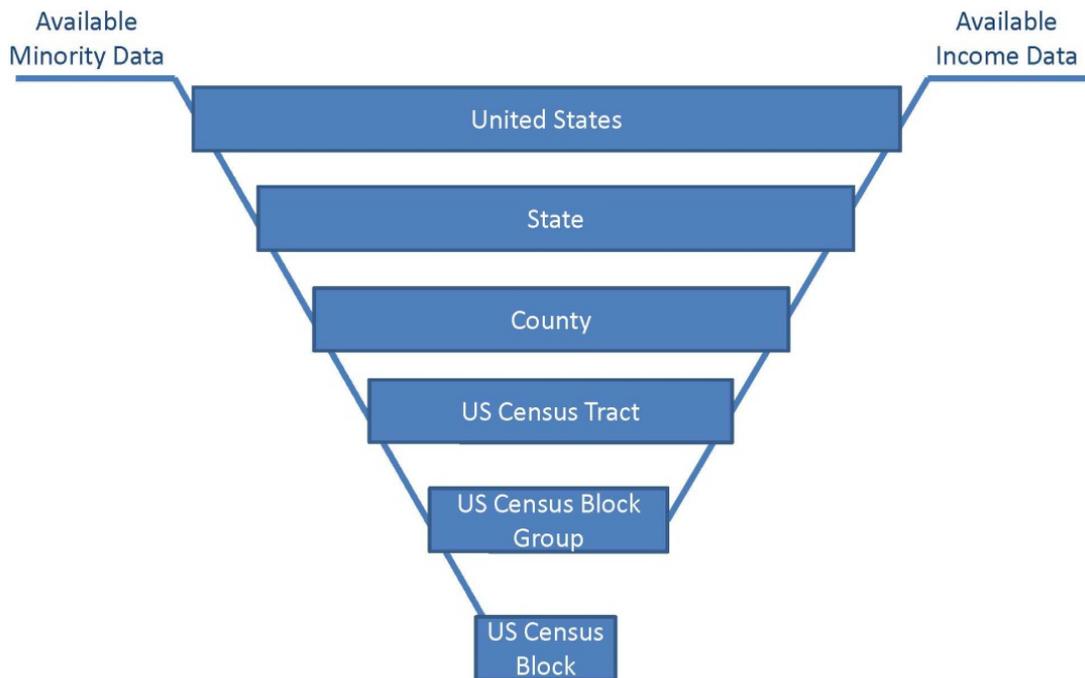
- Determine the geographic area for comparison: This area is typically the surrounding state or county and should be larger than the potential environmental impact area, which is typically a 50-mile radius around the plant. LIC-203, Rev. 1, App. D at D-4 (ENT000261).
- Determine the minority and low-income composition in the geographic area: The minority and low-income U.S. Census data should be analyzed for the selected geographic area. LIC-203, Rev. 1, App. D at D-4 (ENT000261).
- Determine the minority and low-income composition in the potential environmental impact area: U.S. Census data should be used to determine the percentage of minorities (*i.e.*, American Indian or Alaskan Native, Asian or Pacific Islander, Black, and/or Hispanic) and low-income households (*i.e.*, below the annual statistical poverty level) within each potential environmental impact area Census Block Group. LIC-203, Rev. 1, App. D at D-8 (ENT000261).
- Determine if there are any minority or low-income populations: NRC guidance provides two criteria for determining if a minority or low-income populations exists in a census Block Group. LIC-203, Rev. 1, App. D at D-8 (ENT000261). They are as follows:

- A “minority population” is considered to be present if: (1) the minority population in the census Block Group or environmental impact site exceeds 50 percent, or (2) the minority population percentage of the environmental impact area is significantly greater (typically at least 20 percentage points) than the minority population percentage in the geographic area chosen for the comparative analysis. LIC-203, Rev. 1, App. D at D-8, -9 (ENT000261).
- A “low-income population” is considered to be present if: (1) the low-income population in the census Block Group or the environmental impact area exceeds 50 percent, or (2) the percentage of households below the poverty level in an environmental impact area is significantly greater (typically at least 20 percentage points) than the low-income population percentage in the geographic area chosen for the comparative analysis. LIC-203, Rev. 1, App. D at D-9 (ENT000261).

Q29. What is meant by the term census “Block Group,” as that term is used in the context of NRC environmental justice guidance?

A29. (DPC, JLR) A Block Group is a U.S. Census Bureau geographical unit. U.S. Census Bureau, Technical Documentation, Summary File 1: 2000 Census of Population and Housing at App. A, A-8 (2001) (“USCB SF1 Manual”) (ENT000265). A Block Group combines several census Blocks and typically contains between 600 and 3,000 people. USCB SF1 Manual at App. A, A-8, 2-1 (ENT000265). Blocks are the smallest geographical unit the U.S. Census Bureau uses and typically are defined by roads and other physical geography. USCB SF1 Manual at 2-1; *id.* at App. A at A-10 (ENT000265). Several Block Groups make up a census Tract, and several Tracts can be combined to make up counties. USCB SF1 Manual at 2-1 (ENT000265). Each Block Group has a unique identification number. USCB SF1 Manual at

App. A, A-8 (ENT000265). These identification numbers include information regarding the Block Group’s state, county, and Tract. USCB SF1 Manual at App. A, A-8 (ENT000265). The U.S. Census Bureau geographic hierarchy is illustrated as follows:



US Census Geographic Hierarchy

Source: Interpretation of pertinent portion of U.S. Census Bureau, Technical Documentation, Summary File 1: 2000 Census of Population and Housing Figure 2-3 (ENT000265)

Q30. Does NRC guidance recommend the use of Block Groups or Blocks for environmental justice reviews?

A30. (DPC, JLR) NRC guidance specifically endorses using *Block Group* data to identify minority or low-income populations because Block Groups are “small enough so as not to dilute a potential minority or low-income population within the larger general population.” LIC-203, Rev. 1, at D-8 (ENT000261). The NRC considered using census Blocks in its

Environmental Justice Policy Statement, but found that using Blocks would not be practicable because the U.S. Census Bureau does not release income data at the Block-level due to privacy concerns. *See* Environmental Justice Policy Statement, 69 Fed. Reg. at 52,046 (ENT000260). In other words, as illustrated above in the census geographic hierarchy, although minority data are available at the *Block* and *Block Group* levels, low-income data are available only at the *Block Group* level. Therefore, because environmental justice reviews involve examining both minority and low-income populations, performing a complete environmental justice evaluation from published census data would not be possible using only census *Block* data.

Q31. Did NRC Staff address its use of Block Group Data in the Indian Point FSEIS?

A31. (DPC, JLR) Yes. In response to public comments on the Indian Point DSEIS, the NRC Staff stated that “[w]hile Census block data is preferred for identifying minority communities, Census block group data was chosen because poverty and income information is not available from Census at the block level.” FSEIS at A-115 (NYS00133D).

Q32. Is the use of Block Groups consistent with guidance from other state and federal agencies?

A32. (DPC, JLR) Yes. For example, NRC’s approach is consistent with CEQ guidance on identifying minority populations for environmental justice NEPA evaluations. The CEQ environmental justice guidance states only 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.” CEQ EJ Guidance at 26 (ENT000266). Thus, the CEQ environmental

justice guidance endorses the use of Tracts, which as shown in the census geographic hierarchy above, are even larger units than the Block Groups used by the NRC.

In addition, Clearwater itself disclosed documents that indicate that the New York State Department of Environmental Conservation (“NYSDEC”) also uses Block Group data when implementing state environmental laws and policies. *See* 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 EJ Mapping Method Email”) (CLE000029). The email 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. IPEC EJ Mapping Method Email (CLE000029) (emphasis added).

Q33. Are you aware of any requirement that environmental justice evaluations use census Blocks instead of census Block Groups?

A33. (DPC, JLR) No. As noted in response to Question 30, it would not be possible to perform a complete environmental justice evaluation using only census *Block* data because low-income data are not available at that level. In fact, the CEQ guidance permits the use of census Tract data even though a Tract is an even higher-level geographical unit than a Block Group. The most recent NRC guidance similarly endorses the use of Block Groups. *See* LIC-203, Rev. 2, App. C at C-5 (Feb. 17, 2009) (ENT000264).

B. Identification of Minority and Low-Income Populations in the ER Environmental Justice Analysis

Q34. Is Entergy’s ER consistent with NRC guidance for identifying minority and low-income populations?

A34. (DPC, JLR) Yes. Entergy’s environmental justice analysis in the ER follows the guidelines contained in LIC-203, Rev. 1. Specifically, the ER identifies minority and low-

income populations in accordance with the following steps set forth in LIC-203, Rev. 1: (1) determine the geographic area for comparison; (2) determine the minority and low-income composition in the geographic area; (3) determine the minority and low-income composition in the potential environmental impact area; and (4) determine if there are any minority or low-income populations. *See* ER at 2-40 (ENT00015B).

Q35. What was the geographic area Entergy selected for comparison?

A35. (DPC, JLR) Because Indian Point is located in New York and is in close proximity to New Jersey, Connecticut, and Pennsylvania, the ER evaluates: (1) the combined four-state area (*i.e.*, the aggregate population data of all four states); and (2) each of these four states individually. ER at Tbl. 2-7A, Tbl. 2-7B, Tbl. 2-8 (ENT00015B). The selection of these geographic areas complies with NRC guidance because the four-state area is larger than, and completely encompasses, the Indian Point environmental impact area (*i.e.*, the 50-mile region surrounding Indian Point). *See, e.g.*, ER at Tbl. 2-22 (ENT00015B).

Q36. Please describe how Entergy determined the minority and low-income composition in the geographic area.

A36. (DPC, JLR) The ER uses the then-most current (2000) U.S. Census Bureau decennial census data to determine the minority and low-income composition in the geographic area. ER at 2-40 (ENT00015B).

LIC-203, Rev. 1 defines “minority” as American Indian or Alaskan Native; Asian; Native Hawaiian or other Pacific Islander; or Black races; or Hispanic ethnicity. LIC-203, Rev. 1, App. D at D-8 (ENT000261). Entergy created a population table using Microsoft Excel to sort populations into these minority population categories for each of the four states

individually and for the combined four-state area. ER Table 2-7B sets forth the results of this evaluation. ER at 2-43 (ENT00015B).

LIC-203, Rev. 1 defines low-income populations as individuals or families living below the poverty level set by the U.S. Census Bureau using annual statistical poverty thresholds. LIC-203, Rev. 1, App. D at D-8 (ENT000261). The Census Bureau computes poverty using the federal government's official poverty definition. U.S. Census Bureau, Summary File 4, 2000 Census of Population and Housing, App. B, B-34 to -38 (2007) (ENT000267). For purposes of the ER, Entergy created a low-income population table using U.S. Census data and Microsoft Excel for each of the four states individually and for the combined four-state area. ER Table 2-8 sets forth the results of this evaluation. ER at 2-45 (ENT00015B).

Q37. Please describe how Entergy identified minority and low-income populations in the potential environmental impact area.

A37. (DPC, JLR) Based on the Environmental Justice Policy Statement and LIC-203, Rev. 1, Entergy used a 50-mile radius around Indian Point as the potential environmental impact area in the ER. Pursuant to this guidance, Entergy used census Block Group data in the ER to identify minority and low-income populations in the environmental impact area. ER at 2-40 (ENT00015B). It also used Census data to calculate the percentages for each defined minority category living in each of the over 13,000 Block Groups in the environmental impact area surrounding Indian Point. ER at 2-40 (ENT00015B). Further, Entergy calculated the percentages of low-income populations living in each of the over 13,000 Block Groups in the environmental impact area surrounding Indian Point using census data. ER at 2-40 (ENT00015B).

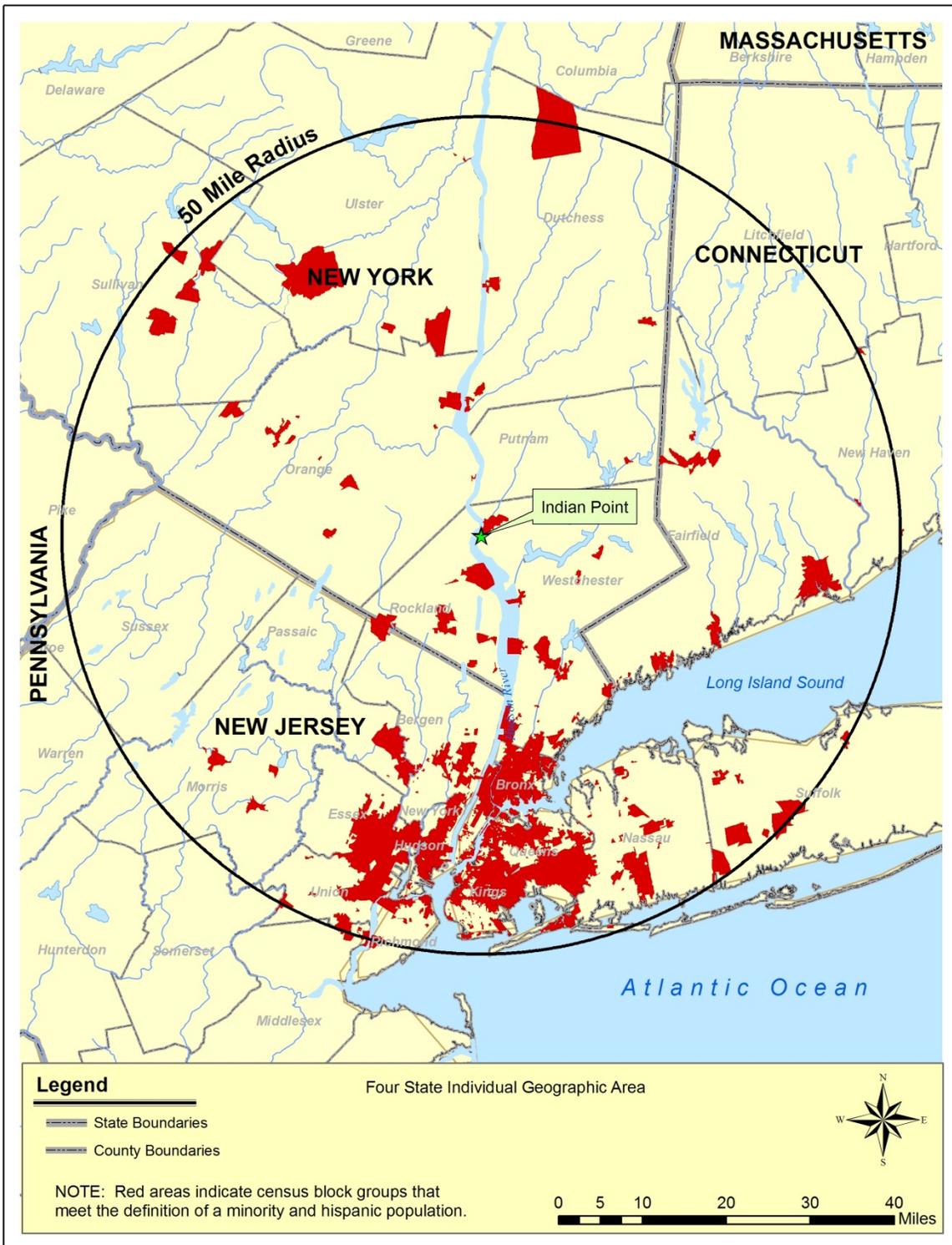
Q38. Please describe the criteria Entergy used to determine if there are any minority populations in the potential environmental impact area.

A38. (DPC, JLR) Entergy used the criteria set forth in the Environmental Justice Policy Statement and LIC-203, Rev. 1 to identify minority populations. ER at 2-40 (ENT00015B). Thus, if percentages of any of the minority categories in a census Block Group within the potential environmental impact area exceeded 50 percent, then Entergy identified the Block Group as containing a minority population. ER at 2-40 (ENT00015B). Furthermore, pursuant to the Environmental Justice Policy Statement and LIC-203, Rev. 1, Entergy used a second criterion to identify minority populations by adding 20 percent to the calculated percentage for each minority category for the geographical area evaluated. ER at 2-40 (ENT00015B). If the percentage for the minority category evaluated exceeded this value, Entergy identified the Block Group as containing a minority population. ER at 2-40 (ENT00015B). ER Table 2-7B sets forth the criteria used to identify minority populations for the geographic area. ER at 2-43 (ENT00015B).

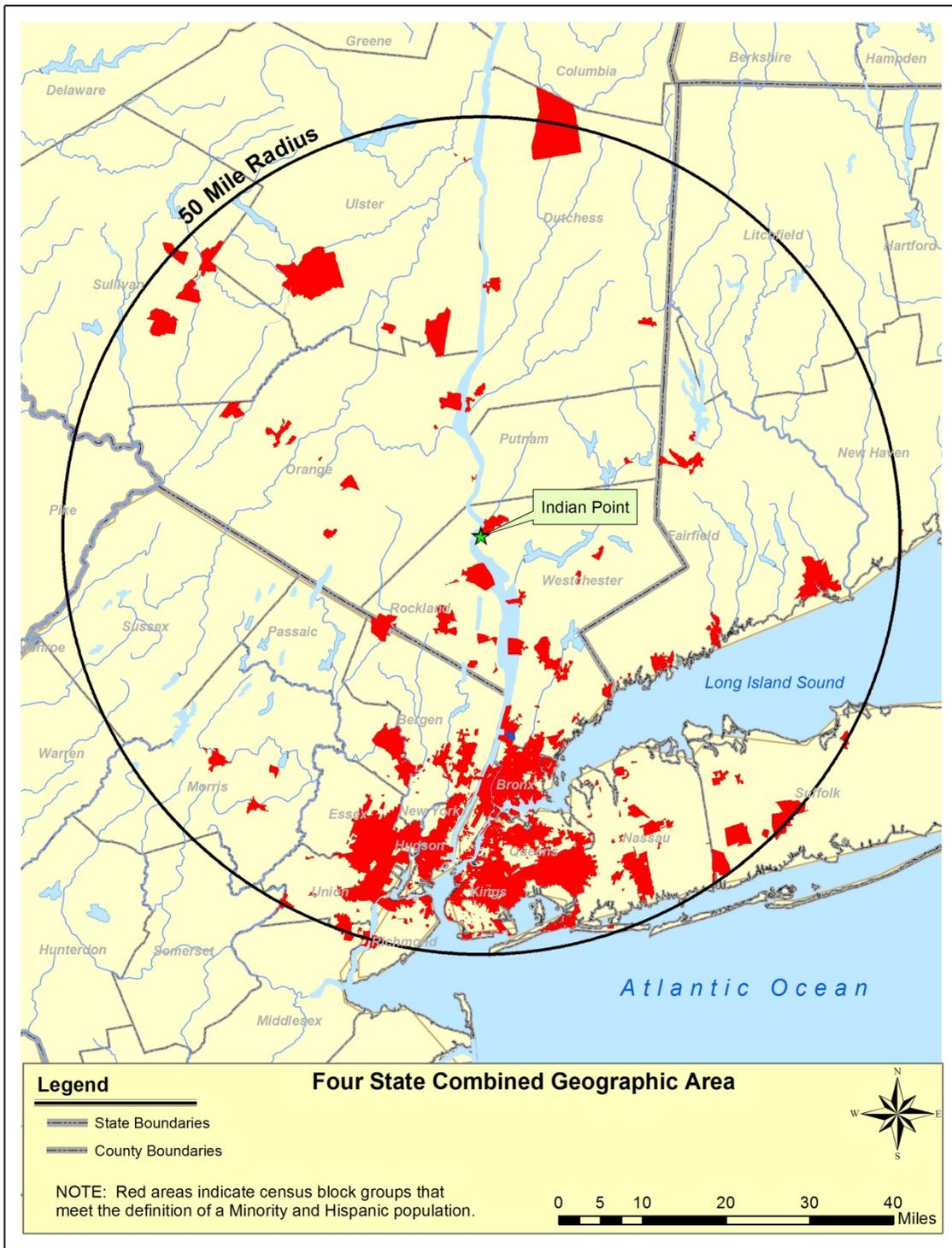
Q39. Please describe how Entergy applied these criteria to determine if there are any minority populations in the potential environmental impact area.

A39. (DPC, JLR) To apply these criteria for purposes of identifying minority populations, Entergy loaded spatial U.S. Census Bureau data, called Topologically Integrated Geographic Encoding and Referencing (“TIGER”) system files, into ArcView, a widely available GIS software program. These files provided the spatial sorting of data for the analysis. Entergy joined the spatial files with the corresponding Block Group databases obtained from the Census Bureau website and, to identify minority populations, compared the above criteria to the data for each of the over 13,000 Block Groups in the environmental impact area. Table 2-7A of

the ER provides the number of Block Groups that met or exceeded the minority criteria found in Table 2-7B. ER at 2-42 (ENT00015B). ER Figures 2-8 through 2-23 displays these Block Groups on maps. ER at 2-103 to 2-118 (ENT00015B). The Combined Minority Plus Hispanic Figures from the ER for individual states and combined states are presented below:



Source: Figure 2-22, Census Block Groups, Combined Minority Plus Hispanic Population, ER at 2-117 (ENT00015B).



Source: Figure 2-23, Census Block Groups, Combined Minority Plus Hispanic Population, ER at 2-118 (ENT00015B).

Q40. Please describe the criteria Entergy used to determine if there are any low-income populations in the potential environmental impact area.

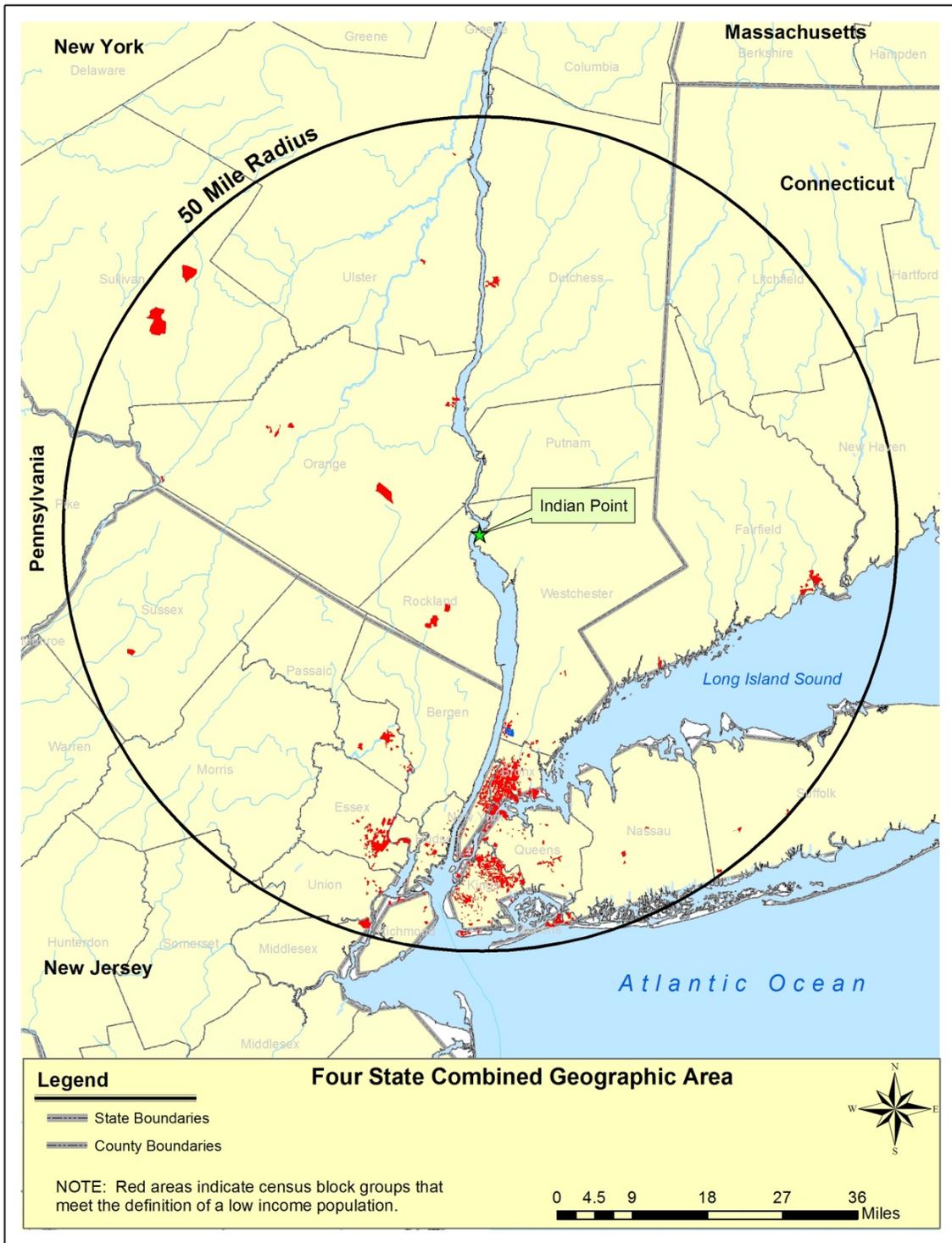
A40. (JLR) Entergy used criteria set forth in LIC-203, Rev. 1 to identify low-income populations within the potential environmental impact area in the ER. ER at 2-44 (ENT00015B). Specifically, if Entergy identified more than 50 percent of the population within the Block Group as being low-income, then Entergy identified that Block Group as a low-income population in the ER. Furthermore, pursuant to LIC-203, Rev. 1, Entergy employed a second criterion by adding 20 percent to the calculated percentage of low-income populations for each geographical area evaluated. Table 2-8 of the ER presents the criteria to identify low-income populations. ER at 2-45 (ENT00015B).

Q41. Please describe how Entergy applied these criteria to determine if there are any low-income populations in the potential environmental impact area.

A41. (DPC, JLR) To apply these criteria and identify low-income populations, Entergy loaded TIGER files into ArcView to allow for spatial sorting of the data. Entergy joined the spatial files with the corresponding Block Group databases obtained from the Census Bureau website and to identify the low-income populations, then compared the above criteria to data for each of the over 13,000 Block Groups in the environmental impact area. Section 2.6.2.3 of the ER describes the resulting percentage of Block Groups with low-income populations. *See* ER at 2-44 to -45 (ENT00015B). ER Figures 2-24 and 2-25 display these Block Groups on maps, which are presented below. ER at 2-119 to -120 (ENT00015B).



Source: Figure 2-24, Census Block Groups – Low-Income Population. ER at 2-119 (ENT00015B).



Source: Figure 2-25, Census Block Groups – Low Income Population. ER at 2-120 (ENT00015B).

Q42. Did Entergy disclose more detailed data to Clearwater for purposes of this proceeding?

A42. (JLR) Yes. In addition to the ER, as part of the discovery process, Entergy disclosed a detailed table presenting the supporting data used to create these ER figures. *See* Table of Census Block Groups within a 50-Mile Radius of Indian Point Energy Center (“Census Block Group Table”) (ENT000268). This more than 200 page table lists the unique census Block Group identification number for all 13,000+ Block Groups within the 50-mile radius of Indian Point, as well as the year 2000 population and race category data for each group. These detailed, raw data from the 2000 census are also publicly available from the U.S. Census Bureau. *See* USCB SF1 Manual at 2-1 (ENT000265).

Q43. Should that detailed supporting data have been included in the ER?

A43. (DPC, JLR) No. NEPA does not require that such detailed information be presented in an environmental impact statement. *See* 10 C.F.R. Pt. 51, App. A § 6 (“The environmental impact statement will succinctly describe the environment to be affected by the proposed action. Data and analyses in the statement will be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Effort and attention will be concentrated on important issues; useless bulk will be eliminated.”); 40 C.F.R. § 1502.2(a) (an environmental impact statement should be “analytic rather than encyclopedic”). Accordingly, the ER’s level of detail is consistent with NEPA, NRC regulatory requirements in Part 51, and NRC guidance.

C. Identification of Minority and Low-Income Populations in the FSEIS Environmental Justice Analysis

Q44. How did the NRC Staff determine whether minority and low-income populations were located near Indian Point for purposes of the environmental justice evaluation in the FSEIS?

A44. (DPC, JLR) Like the ER, the NRC Staff's environmental justice evaluation in the FSEIS uses the 50-mile radius as the environmental impact area. *See* FSEIS at 4-53 (NYS00133B). The FSEIS also uses the 2000 Census Block Group population data to identify any environmental justice populations in that area. *See* FSEIS at 4-53 (NYS00133B). Furthermore, 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. *See* FSEIS at 4-50, 4-53 (NYS00133B). The NRC Staff identifies census Block Groups containing minority and low-income populations in Figures 4-5 and 4-6 of the FSEIS, presented below:

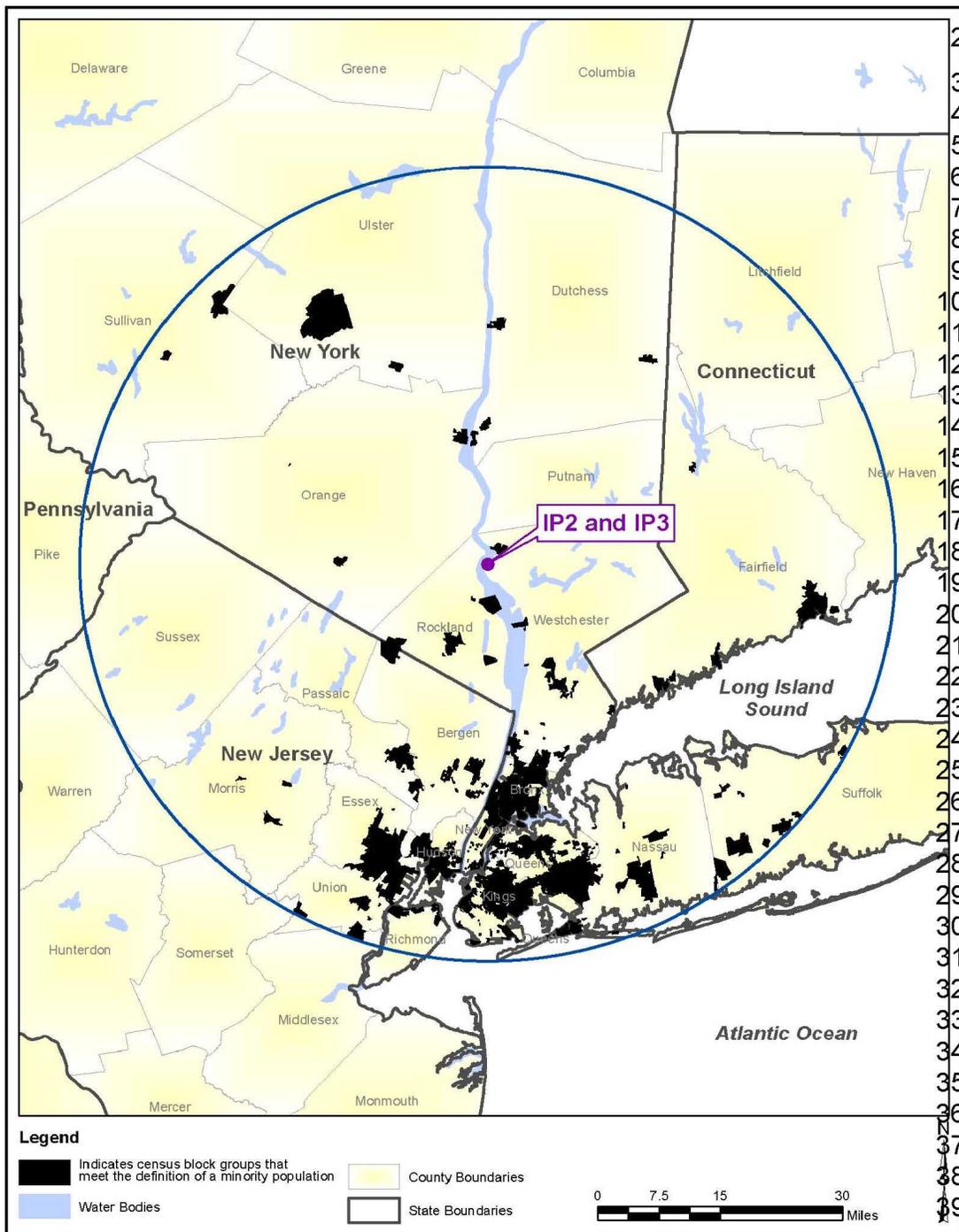


Figure 4-5. Minority block groups in 2000 within a 50-mi radius of IP2 and IP3 (USCB 2008)

Source: FSEIS at 4-52 (NYS00133B).

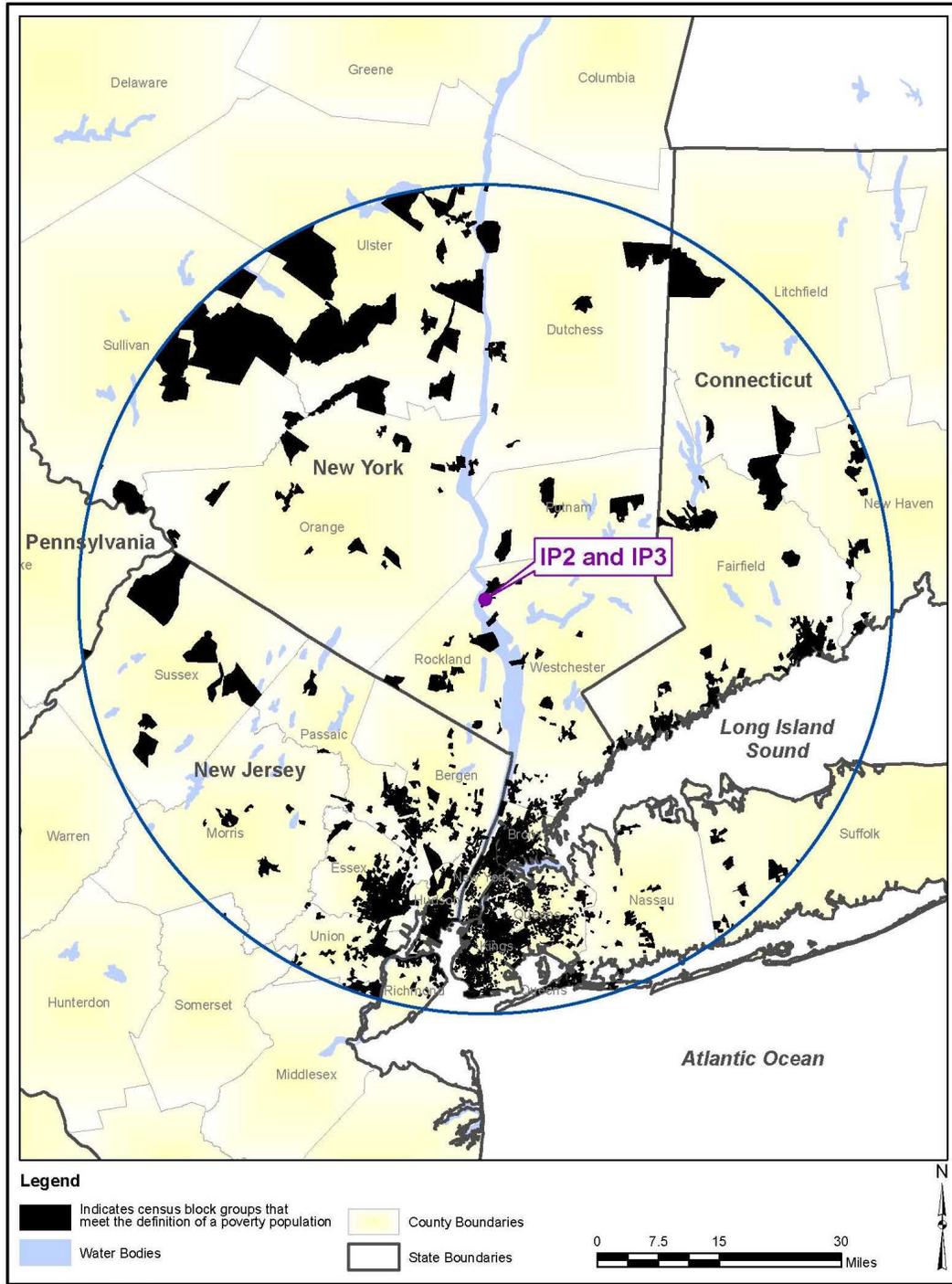


Figure 4-6. Low-income block groups in 2000 within a 50-mi radius of IP2 and IP3 (USCB 2008)

Source: FSEIS at 4-55 (NYS00133B).

Q45. Please describe any differences between Entergy’s and the NRC Staff’s approaches for identifying minority and low-income populations located in the 50-mile potential environmental impact area.

A45. (DPC, JLR) Entergy and the NRC Staff largely apply the same criteria for identifying minority populations in the ER and FSEIS, respectively. Entergy and the NRC Staff, however, applied a different minority criterion to the Pennsylvania census Block Groups (38.8 percent (Entergy) versus 50 percent (NRC Staff)). *Compare* ER at 2-43 (ENT00015B), *with* FSEIS at 4-50 (NYS00133B). Entergy and NRC Staff selected different criteria because LIC-203, Rev. 1 does not provide detailed instructions for defining the geographic area for comparison when the 50-mile radius around the plant overlaps multiple state boundaries. This difference was inconsequential because neither Entergy nor the NRC Staff evaluation identifies minority populations in Pennsylvania. *Compare* FSEIS at 4-52 (NYS00133B), *with* ER at 2-117 (ENT00015B).

For low income populations, NRC Staff uses a 14.5 percent criterion (*i.e.*, if more than 14.5 percent of the Block Group’s population was low-income, then the Block Group was considered to have an environmental justice population) in the FSEIS which is lower than the criteria Entergy used in the ER to identify low-income populations in the combined four-state area and in New York, New Jersey, Connecticut, and Pennsylvania individually. *Compare* FSEIS at 4-53 (NYS00133B), *with* ER at 2-45 (ENT00015B). However, although the ER and the FSEIS use certain, slightly different criteria to identify minority and low-income populations in the potential environmental impact area, a comparison between Figures 4-5 and 4-6 of the FSEIS (NYS00133B) and Figures 2-22, 2-23, 2-24, and 2-25 of the ER (ENT00015B),

demonstrates that, overall, the FSEIS and ER consistently and conservatively identify environmental justice populations.

Q46. What conclusion does the FSEIS reach with regard to impacts to environmental justice populations?

A46. (DPC) The FSEIS concludes that IP2 and IP3 license renewal would not impose disproportionately high and adverse impacts on minority and low-income populations. *See* FSEIS at 4-53 to -56 (NYS00133B). This conclusion is based on the analysis of environmental health and safety impacts presented in the Chapters 2 and 4 of the FSEIS. *See* FSEIS at 4-45 (NYS00133B). In reaching this conclusion, the NRC Staff considered the risk of radiological exposure through the consumption patterns of special pathway receptors, including subsistence consumption of fish, native vegetation, surface waters, sediments, and local produce; absorption of contaminants in sediments through the skin; and inhalation of plant materials. FSEIS at 4-54 to -56 (NYS00133B). Having done this analysis, the FSEIS finds that environmental justice impacts are SMALL. FSEIS at 9-9 (NYS00133C).

D. Identification of Minority and Low-Income Populations Living in Institutions

Q47. Do the ER and FSEIS environmental justice analyses identify minority and low-income populations living in institutions near Indian Point?

A47. (JLR) Yes. As previously explained, both Entergy and the NRC Staff used census Block Group data to identify minority and low-income populations. *See generally* Section V above. Block Group data from the 2000 census includes all people who do and do not live in housing units. Specifically, the Block Group data includes, and the Census Bureau classifies, all people *not* living in housing units as living in Group Quarters. USCB SF1 Manual at 1-1; *id.* at App. B, B-3 (ENT000265). As defined by the census, there are two general

categories of people in Group Quarters: (1) the institutionalized population; and (2) the non-institutionalized population. USCB SF1 Manual at App. B, B-3 (ENT000265).

Q48. Do Census data relied on by Entergy and NRC Staff account for environmental justice populations living in institutions?

A48. (JLR) Yes. The Census Block data, through the Group Quarters classification, account for all populations living in institutions, including environmental justice populations. In response to public comments Clearwater submitted on the DSEIS, the NRC Staff addresses this point in the FSEIS, stating as follows:

All 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 (in federal or state prisons; local jails; federal detention centers; juvenile institutions; nursing or convalescent homes for the aged or dependent; or homes, schools, hospitals, or wards for the physically handicapped, mentally retarded, or mentally ill; or in drug/alcohol recovery facilities). The location of minority and low-income populations identified in a SEIS environmental justice assessment are determined on the basis of where they are living at the time of the census. All people living in the U.S. (including people living in prisons) on April 1, 2000 were counted based on where they were living at the time.

FSEIS at A-119 (NYS00133D); *see also* FSEIS at A-113, A-119 to -120 (NYS00133D).

Q49. What types of facilities fit within the Census Bureau's definition of Group Quarters?

A49. (JLR) There are a wide variety of Group Quarters, as defined by the Census Bureau, that contain institutional populations. These include correctional institutions; nursing homes; psychiatric hospitals; hospitals or wards for chronically ill; schools, hospitals, or wards for the mentally retarded; schools, hospitals, or wards for the physically handicapped; hospitals and wards for drug and alcohol abuse; wards in general hospitals for patients who have no usual home elsewhere; wards in military hospitals for patients who have no usual home elsewhere; and

juvenile institutions. *See* USCB SF1 Manual at App. B at B-3 to -5 (ENT000265). The correctional institution sub-classification includes prisons; federal detention centers; military disciplinary barracks and jails; local jails and other confinement facilities; halfway houses; and other types of correctional institutions. USCB SF1 Manual at App. B, B-3 to -4 (ENT000265).

There also are a wide variety of Group Quarters that contain non-institutional populations. These include group homes; religious group homes; college quarters off campus; college dormitories; military quarters; agriculture workers' dormitories; dormitories for nurses and interns in general and military hospitals; job corps and vocational training facilities; emergency and transitional shelters (with sleeping facilities); shelters for children who are runaways, neglected, or without conventional housing; shelters for abused women (shelters against domestic violence or family crisis centers); soup kitchens; targeted non-sheltered outdoor locations; crews of maritime vessels; residential facilities providing "protective oversight"; and staff residents of institutions. USCB SF1 Manual at App. B, B-5 to -7 (ENT000265).

Q50. Are all of the populations living in institutions referenced by Clearwater environmental justice populations?

A50. (JLR, DPC) No. The objective of the NRC's environmental justice review is to identify minority and low-income populations. *See* LIC-203, Rev. 1 at D-4, D-8 (ENT000261). LIC-203, Rev. 1 defines "minority" as American Indian or Alaskan Native; Asian; Native Hawaiian or other Pacific Islander; or Black races or Hispanic ethnicity, and "low-income" as individuals or families living below the poverty level set by the U.S. Census Bureau. LIC-203, Rev. 1, App. D at D-8 (ENT000261). Clearwater's testimony focuses on some of these same populations, but also on populations with other characteristics, such as residence in certain types of facilities (*e.g.*, nursing homes and hospitals), and transport-dependence. *See, e.g.*, Greene

Testimony at 4-6, 13-22 (CLE000010). Nothing in LIC-203, Rev. 1, Executive Order 12898, or implementing NEPA guidance contemplates identifying or defining environmental justice populations based such other characteristics.

Q51. Within the 50-mile radius of Indian Point, how many Block Groups contain correctional institutions?

A51. (JLR) I have confirmed that there are 67 Block Groups within the 50-mile region that contain census-defined correctional institutions. Of those, 57 census Block Groups exceed the NRC defined minority criteria as explained in Section 2.6.2.2 and illustrated in Figures 2-22 and 2-23 of the Indian Point ER. The identified Block Groups are included in the minority census Block Group counts in Table 2-7A and Figures 2-8 through 2-23 of the ER (ENT00015B) and Figure 4-5 of the FSEIS (at 4-52) (NYS00133B). Thus, Block Groups that contain correctional facilities and also meet NRC's environmental justice criteria are identified in the ER and the FSEIS, including the Block Groups that contain the Sing Sing and Westchester County Correctional Facilities.

VI. ENVIRONMENTAL IMPACTS OF SEVERE ACCIDENTS

Q52. Please provide a summary of how the NRC addresses severe accidents in the GEIS.

A52. (MJS, DPC) In the GEIS, the NRC addresses on a generic basis the environmental consequences that would result from severe accidents at all plants. Based on this assessment, the GEIS concludes:

[T]he predicted effects of a severe accident during [the middle year of license renewal period] at the 74 sites of nuclear power plants in the United States are not expected to exceed a small fraction of that risk to which the population is already exposed. . . . Results indicate that the highest individual dose would be 3×10^{-4} rem/[reactor-year (RY)]. This dose compares to an average of 3×10^{-1} rem/person/year for all other causes, including radon.

Therefore, the probability-weighted consequences from atmospheric releases associated with severe accidents is judged to be of *small significance for all plants*.

GEIS at 5-115 (emphasis added) (NYS00131C); *see also* National Council on Radiation Protection and Measurements [(“NCRP”)], Report No. 160, *Ionizing Radiation Exposure of the Population of the United States* (Mar. 3, 2009) (“NCRP Report No. 160”) (ENT000269).

The GEIS conclusion that the probability-weighted consequences of severe accidents is of small significance for all plants is codified in NRC regulations. 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1. “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.

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.” *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 316 (2010).

Q53. Did the FSEIS adopt this generic finding?

A53. (MJS, DPC) Yes. The NRC Staff concludes in the FSEIS that there are no severe accident environmental impacts related to Indian Point beyond those discussed in the GEIS. *See* FSEIS at 5-4 (NYS00133B).

Q54. Was this generic finding adopted in the FSEIS environmental justice evaluation?

A54. (MJS, DPC) Yes. The environmental justice evaluation in the FSEIS incorporates this generic finding as follows:

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 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.

FSEIS at 4-53 (NYS00133B).

Q55. In your opinion, was it appropriate for the FSEIS to apply the generic severe accident finding when determining whether environmental justice populations would suffer disproportionately significant and adverse impacts in the event of a severe accident at Indian Point?

A55. (MJS, DPC) Yes. The Commission determined by regulation that the impacts from severe accidents are SMALL for all plants, which applies to all populations. 10 C.F.R. Pt. 51, Subpt. A, App. B, Tbl. B-1. Accordingly, there can be no disproportionately high and adverse impact on minority and low-income populations due to a severe accident.

Q56. Does the GEIS severe accident evaluation account for uncertainties associated with emergency planning and evacuation-related risks?

A56. (MJS, DPC) Yes. When it prepared the GEIS, the NRC specifically considered issues associated with emergency planning, which included 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.” GEIS at 5-102 (NYS00131C); *see also* License Renewal Environmental Review Rule, 61 Fed. Reg. at 28,480 (NYS000127). The GEIS states that its assumptions in this regard are generally conservative, meaning its calculated results “would most likely be in the direction of larger calculated early effects.” *See* GEIS at 5-19 to -20, 5-28, 5-33, 5-44, 5-102, 5-102 (NYS00131C).

Q57. Please provide a summary of how the NRC addresses severe accident mitigation in license renewal environmental reviews.

A57. (MJS, DPC) As discussed above, the Commission determined that the GEIS evaluation appropriately addressed risk-based severe accident consequences. *See* License Renewal Environmental Review Rule, 61 Fed. Reg. at 28,480 (NYS000127). The Commission, however, found that additional plant-specific analysis of severe accident mitigation alternatives (“SAMAs”) was necessary for plants that had not previously considered such alternatives. *See* Final Rule, Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 Fed. Reg. at 28,480-81 (NYS000127). The Indian Point FSEIS contains a SAMA evaluation, but the Board has not admitted any Clearwater contention challenging that evaluation.

Q58. Are emergency planning issues within the scope of license renewal NEPA reviews?

A58. (MJS, DPC) No. The NRC previously considered whether it needed to review emergency planning issues in license renewal proceedings, and, by rulemaking, generically “determined that the current requirements, including continuing update requirements for emergency planning, provide reasonable assurance that an acceptable level of emergency preparedness exists at any operating reactor at any time in its operating lifetime.” Final Rule, Nuclear Power Plant License Renewal, 56 Fed. Reg. 64,943, 64,966-67 (Dec. 13, 1991) (“Nuclear Power Plant License Renewal”) (ENT000270).

The Commission recently emphasized that emergency planning and associated evacuation-related challenges may not be brought in a license renewal proceeding, even in the context of an environmental contention. *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 SAMA environmental review).

VII. EMERGENCY PLANNING AND PROTECTIVE ACTIONS

A. Regulatory Requirements Pertaining to Emergency Planning

Q59. Please provide a brief summary of NRC emergency planning regulations.

A59. (MJS, DPC) NRC regulations require that nuclear power plant licensees maintain emergency preparedness plans to be implemented in the event of an accident. *See* 10 C.F.R. §§ 50.47, 50.54(q), (s)-(u); 10 C.F.R. Pt. 50, App. E. These regulations require that applicants submit to NRC the radiological emergency response plans of state and local government entities that are wholly or partially within the 10-mile plume exposure emergency planning zone

(“EPZ”), as well as the plans of state governments wholly or partially within the 50-mile ingestion pathway EPZ. 10 C.F.R. § 50.33(g).

State and local governments generally are 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 radiological emergency. *See* 44 C.F.R. § 350.5(b); 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) (“NUREG-0654 Supp. 3”) (ENT000271).

FEMA is the lead federal agency responsible for making findings and determinations with regard to off-site state and local governmental radiological emergency planning efforts necessary for protecting public health and safety. *See* 10 C.F.R. § 50.47(a)(2), (a)(1)(i), (b); 44 C.F.R. Part 350. To ensure that emergency preparedness plans remain adequate to protect the health and safety of the public, FEMA and the NRC evaluate them biennially in comprehensive emergency preparedness exercises. *See* 10 C.F.R. § 50.47(a)(2); 10 C.F.R. Pt. 50, App. E, § IV.F.2. The NRC’s requirements in 10 C.F.R. Part 50 thus ensure continued emergency preparedness plan effectiveness during the operating license and license renewal terms. *See* Nuclear Power Plant License Renewal, 56 Fed. Reg. at 64,966 (ENT000270).

Q60. Please describe the regulatory requirements associated with the 10-mile EPZ.

A60. (MJS) NRC regulations require that licensee emergency plans consider a range of protective actions for all members of the public within the 10-mile EPZ. *See* 10 C.F.R. § 50.47(b)(10). The protective actions to be considered must include, among other things, evacuation and sheltering. 10 C.F.R. § 50.47(b)(10). NRC regulations also require that

guidelines for choosing protective actions for members of the public within the 10-mile EPZ be consistent with federal guidance. 10 C.F.R. § 50.47(b)(10).

B. Indian Point Emergency Plans

Q61. Are Indian Point emergency plans designed to protect all members of the public in the event of a severe accident?

A61. (MJS) Yes. In accordance with the regulations and guidance documents referenced earlier, Indian Point emergency plans, in conjunction with state and local emergency response plans and organizations, establish protective actions that can be taken to evacuate or shelter members of the public in the very unlikely event of an accident. *See* Entergy, Indian Point Energy Center Emergency Plan (“IPEC-EP”) Rev. 11-00, § J.7 (Sept. 14, 2011) (CLE000042); IPEC-EP Implementing Procedures: IP-EP-410, Protective Action Recommendations (June 30, 2011) (ENT000278); IP-EP-120, Emergency Classification (June 9, 2010) (ENT000280); New York State Radiological Emergency Preparedness Plan at III-32 to III-35 (Mar. 2011) (“NYS REPP”) (ENT000272).

As confirmed in the most recent FEMA Indian Point radiological exercise report: “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 . . . there is reasonable assurance that appropriate measures can be taken offsite in the event of a radiological emergency.” Letter from L. Canton, FEMA, to D. Tailleart, NRC (Dec. 5, 2011) (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) (“FEMA Final Exercise Report”) (ENT000273). This conclusion is consistent with numerous prior FEMA findings that appropriate measures to protect the health and safety of *all communities* surrounding Indian Point can be taken and are capable of being implemented. *See, e.g.*, Letter from L. Canton,

Regional Administrator, FEMA, to J. R. Gibb, Director, NYS Emergency Management Office (June 28, 2010) (ENT000274); Letter from W. C. Conklin, Department of Homeland Security, to J. R. Gibb, NYS Emergency Management Office (Feb. 21, 2007) (ENT000275); FEMA, Radiological Emergency Preparedness: Reasonable Assurance Finding for the Indian Point Energy Center, 68 Fed. Reg. 57,702 (Oct. 6, 2003) (ENT000276); FEMA, Approval of the State of New York Radiological Emergency Response Plant Site-specific to the Indian Point Nuclear Power Generating Station, 61 Fed. Reg. 24,938 (May 17, 1996) (ENT000277).

Q62. Are any particular protective action recommendations likely in the event of a severe accident?

A62. (MJS) Yes. Protective action recommendations generally would include, at a minimum, a recommendation for evacuation of the general public within the 2-mile radius around Indian Point and 5 miles downwind in the direction of the plume, and for sheltering of the remainder of the 10-mile EPZ. Indian Point Emergency Plan § J.7 (CLE000042); NYS REPP Procedure H, H-20 to -21 (ENT000272).

Q63. Is there any reason to believe that a severe accident would result in disproportionately high and adverse human health and environmental effects to minority and low-income populations located beyond the 10-mile EPZ?

A63. (MJS) No. The Commission has found that the need for protective actions beyond a few miles from the plant is extremely unlikely. *See* Denial of Petitions for Rulemaking; Emergency Preparedness at Nuclear Power Plants, 55 Fed. Reg. 5603 (Feb. 16, 1990) (ENT000282). The Commission indicated that in 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. Denial of Petitions for Rulemaking, Emergency Preparedness at Nuclear Power Plants, 55 Fed. Reg. at 5606 (ENT000282). This conclusion is premised on, among other things, existing infrastructure of federal, state, and local emergency response organizations, and the fact that the most likely protective action beyond 10 miles would be sheltering. Denial of Petitions for Rulemaking, Emergency Preparedness at Nuclear Power Plants, 55 Fed. Reg. at 5606 (ENT000282).

Q64. Does guidance exist that amplifies the selection of a particular protective action?

A64. (MJS) Yes. EPA guidance notes that implementation of protective actions should consider the risks of the radiation exposure versus other risks inherent in the evacuation process itself. EPA 400-R-92-001 Section 2.3.1 states:

Sheltering may be preferable to evacuation as a protective action in some situations. Because of the higher risk associated with evacuation of some special groups in the population (e.g. those who are not readily mobile), sheltering may be the preferred alternative for such groups as a protective action at projected doses up to 5 rem. In addition under unusually hazardous environmental conditions use of sheltering at projected doses up to 5 rem for the general population (and up to 10 rem to special groups) may

become justified. Sheltering may also provide protection equal to or greater than evacuation due to the nature of the source term and/or the presence of temporal or other site specific conditions. Illustrative examples of situations or groups for which evacuation may not be appropriate at 1 rem include: a) the presence of severe weather, b) competing disasters, c) institutionalized persons who are not readily mobile, and d) local physical factors which impede evacuation.

EPA, 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents at 2-5 to -6 (1991) (ENT00284A).

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 Hospital Center of Peekskill/Cortlandt. Westchester County Radiological Emergency Plan at III-30 (Mar. 2011) (“Westchester REPP”) (ENT00285A). Similarly, Rockland County has designated 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. Rockland County Radiological Emergency Preparedness Plan at III-31 (May 2010) (“Rockland REPP”) (ENT00286A).

Q65. Does the selective shelter-in-place protective action option in Indian Point emergency plans preclude the selection of the evacuation option in the event of a severe accident?

A65. (MJS) No. Nothing in these emergency plans eliminates evacuation as another option for these institutions. In fact, these plans include provisions for a “general evacuation” of all individuals from any or all areas within the 10-mile EPZ, if appropriate. See NYS REPP at III-34 (ENT000272); Westchester REPP at III-31 (ENT00285A); Rockland REPP at III-32 (ENT00286A).

Q66. Please describe NYS and County emergency plans as those plans relate to people who depend on public transportation.

A66. (MJS) Westchester and Rockland County plans each address evacuation of transport-dependent individuals. *See* Westchester REPP, Implementation Procedure 5.0, Attach. 2 (ENT00285C); Rockland REPP at Procedures DPT-1, DPT-2, § 5.4, Attach. 3 (ENT00286B). Bus routes and stops are predetermined and publicized in emergency planning booklets and on county websites. *See, e.g.,* Westchester County Indian Point Emergency Guide at 9-13 (2010-2011) (ENT000287); Rockland County Emergency Planning for Indian Point Booklet (2011-2012) at 12-17 (ENT000288).

For example, the Westchester County Indian Point Emergency Guide clearly 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 (ENT000287). Buses cover all portions of the EPZ, beyond areas normally served by public transportation routes. *See* Westchester Emergency Guide Pullout at 9-13 (ENT000287). This route coverage is intended to serve any member of the public, regardless of income or minority status, including individuals who do not own or do not have access to vehicles at the time of evacuation. The routes end at pre-designated general population reception centers located well outside of the emergency planning zone. *See* Westchester County Indian Point Emergency Guide at 5 (ENT000287).

Q67. Do NYS and County emergency plans account for transport-dependent people that cannot get to a bus on their own?

A67. (MJS) Yes. New York State and County emergency plans specifically provide that state and county governments will provide assistance for those who cannot evacuate on their own. *See* Indian Point Emergency Plan § J.10.d (CLE000042) (referencing action for “special

needs persons (including mobility impaired)"); NYS REPP at III-35 (ENT000272) ("Public transportation will be provided to persons without transportation."); Westchester REPP, Implementation Procedure 1.0, Attach. 1, at 32 (ENT00285A) (Items 11.0 and 12.0, ensuring sheltering and evacuation arrangements are in place for institutionalized mobility impaired, before non-institutionalized mobility impaired); Rockland REPP, Procedure EC-1, Attach. 1, at 5 (ENT00286B) (directing the Rockland County Emergency Coordinator determine and implement protective actions for special facilities and non-institutionalized mobility impaired).

Q68. Please describe NYS and County emergency plans as those plans relate to correctional facilities.

A68. (MJS) County plans account for correctional facilities located within the 10-mile EPZ. The Rockland County Plan addresses the Rockland County Correctional Facility, local police lock ups, and jails. Rockland REPP III-31; Procedure DOH-8, § 5.4 (ENT00286C). In the unlikely event of a severe accident, the Rockland County Plan directs the County contact facilities to confirm how many persons and staff they have, and implement any necessary protective actions for prisoners of the county jail. Rockland REPP Procedure RCS-1, §§ 5.3.9.7, 5.3.9.8, 5.3.9.9 (ENT00286C).

Sing Sing is a New York State Department of Corrections ("NYSDOC") facility located in Westchester County. In the unlikely event of a severe accident, the County will notify NYSDOC of protective action orders so that NYSDOC may consider implementing actions for Sing Sing. Westchester REPP, Implementation Procedure 1.0, Attach. 1, at 33 (ENT00285A) (Item 17.0 specifying that "Correctional facilities within the EPZ have been notified and are prepared to take protective action if necessary."). NYSDOC makes decisions on protective actions for its facilities. *See* NYS REPP at III-11 (ENT000272).

Although the details of such plans are not publicly-available due to security concerns, New York State regulations require correctional facilities to maintain detailed emergency plans and well-trained staff. Specifically, each NYSDOC correctional facility must have a written health services emergency and disaster preparedness plan, and NYSDOC must “provide a formal orientation and training program for new health care staff which shall include . . . training in all aspects of the emergency and disaster preparedness plan.” 9 NYCRR AA § 7651.32; § 7651.31(c)(4) (ENT000289).

Although the Westchester County Correctional Facility is not within the EPZ, the Westchester County Emergency Plan nonetheless accounts for correctional facility actions in the unlikely event of an emergency at Indian Point. *See* Westchester REPP, Implementation Procedure 17.0, at 16 (ENT00285D). Should an emergency occur at Indian Point, Westchester County Correctional Facility personnel are to “provide and ensure a safe environment for its detainees and staff,” are to “assist the Public Safety Department with a number of law enforcement related duties,” and will make “additional internal agency notifications.” Westchester REPP, Implementation Procedure 15.0, at 3 (ENT00285D).

Q69. Do the Sing Sing and Rockland County Correctional Facilities have evacuation plans?

A69. (MJS) Yes. Although shelter-in-place would likely be the initial protective action for Sing Sing, the facility has an evacuation plan. Details of this plan are discussed in the Witt Report prepared for New York State in 2003. *See* Witt Report at 4.5.2.1, page 71 (ENT000263). As required, these evacuation plans ensure special accommodations are made for inmates with psychological problems. Witt Report at 4.5.2.1, page 71 (ENT000263).

Similarly, in the unlikely event of a severe accident, Rockland Correctional Officials would make protective action decisions for the Rockland County Correctional Facility. *See* Rockland REPP at III-31 (ENT00286A).

Q70. Are the county emergency plans periodically reviewed?

A70. (MJS) Yes. FEMA conducts a comprehensive review of county plans biennially in preparation for an evaluated exercise at the Indian Point site. 44 C.F.R. § 350.9 (c)(2) (“Each State with multiple sites within its boundaries shall fully participate in a joint exercise at some site on a rotational basis at least every 2 years.”); *see also* FEMA Final Exercise Report at 4 (ENT000273) (referring to biennial county exercises and review).

Q71. Is the designation of shelter-in-place as a protective action option consistent with federal regulations and guidance documents?

A71. (MJS) Yes. The designation of shelter-in-place as an appropriate protective action option is fully in accordance with NRC and FEMA regulations and guidance documents. *See* 10 C.F.R. § 50.47(b)(10); NRC Regulatory Issue Summary 2004-13, Consideration of Sheltering in Licensee’s Range of Protective Action Recommendations (Aug. 2, 2004) (ENT000290); NUREG/CR-6953, Review of NUREG-0654/FEMA-REP-1, Rev. 1, Supplement 3, Criteria for Protective Action Recommendations for Severe Accidents at 59 (Dec. 2007) (“NUREG/CR-6953”) (ENT000291).

Sheltering is also consistent with EPA guidance which sets forth four general principles for selecting protective actions: (1) acute effects on health should be avoided; (2) the risk of delayed effects on health should not exceed upper bounds that are judged to be adequately protective of public health under emergency conditions and are reasonably achievable; (3) protective action guidelines should not be higher than justified on the basis of optimization of

cost and the collective risk of effects on health (*i.e.*, any reduction of risk to public health achievable at acceptable cost should be carried out); and (4) regardless of Principles 1 through 3, the risk to health from a protective action should not itself exceed the risk to health from the dose that would be avoided. EPA 400-R-92-001, at 1-5 (ENT000284A).

Q72. Is the designation of shelter-in-place as a protective action based on characteristics unique to minority or low-income communities?

A72. (MJS) No. The designation of shelter-in-place as a protective action is not based on any characteristics unique to low-income or minority communities. This is demonstrated by the fact that shelter-in-place also is designated as an appropriate protective action for other institutions near Indian Point that do not contain environmental justice populations including Hudson Valley Hospital Center, Helen Hayes Rehabilitation Hospital, and the Robert E. Yeager Health Center. As discussed above, a decision to implement the shelter-in-place response option would consider a number of factors, including mobility, the radiological dose reduction compared to other options, and whether the individuals involved would suffer any other non-radiological harm as a result of the evacuation. *See, e.g.*, Westchester REPP at III-30 (ENT00285A). With regard to the facilities listed in the county plans as primary locations for the selective shelter-in-place response option, sheltering is likely to be the protective action of choice for these facilities based on their distances from Indian Point, population mobility, and their physical characteristics and construction, not on any characteristics unique to minority or low-income communities.

Q73. Are you aware of any actions included in state or county emergency plans indicating that Sing Sing or any other correctional facility near Indian Point would somehow suffer disproportionately high and adverse impacts as a result of a severe accident?

A73. (MJS) No. As just explained, sheltering-in-place is likely to be the appropriate protective action for such facilities in the unlikely event of a severe accident. Further, nothing in the state or county plans precludes evacuation, if appropriate under the circumstances. Accordingly, there is simply no basis to assert that prison populations would somehow suffer disproportionately high and adverse human health and environmental impacts as the result of an accident at Indian Point.

Q74. Please describe the Indian Point emergency plans as those plans relate to nursing homes and hospitals.

A74. (MJS) New York State regulations require that each nursing home and hospital have comprehensive, biennially-updated written emergency and disaster preparedness plans that include provisions accounting for nuclear accidents. *See* 10 NYCRR § 405.24 (g) (ENT000292); *see also* 10 NYCRR § 702.7 (ENT000293) (applying the same requirements to other medical facilities). Hospitals are also required to have evacuation plans, and to train personnel in patient evacuation. *See* 10 NYCRR § 405.24 (b)(2)-(3) (ENT000292). Nursing homes are subject to almost identical regulations, with the additional requirement that all personnel receive training on each facility's safety program, including resident emergency procedures. *See* 10 NYCRR § 415.26 (c)(iii)(4), (f)(1) (ENT000294).

Additionally, the Rockland and Westchester County emergency plans account for nursing homes, hospitals, and other "special facilities" in the event of a severe accident. Rockland

REPP, Procedure EC-1, Attach. 2, 12 (Page 13 of 15) (ENT00286B) (The Department of Health is to “determine protective actions for special facilities (e.g. nursing homes, hospitals, etc.).”); Westchester REPP at I-8 to -9 (ENT00285A) (“If protective actions are required, the county will . . . notify hospitals, nursing homes and other special facilities.”). These plans also provide for transportation assistance to and/or planning with these facilities. *See* Rockland REPP at III-35 (ENT00286A); Westchester REPP, Implementation Procedure 10.0, at 3; *id.* at Implementation Procedure 16.0, 9-10 (ENT00285D).

Q75. Please describe the Indian Point emergency plans as those plans relate to Spanish speaking populations.

A75. (MJS) If a non-English language is spoken by more than 5 percent of a county’s population, then FEMA requires that radiological emergency preparedness plans address communications with those who speak that language. FEMA REPP Manual at Page II-32 (ENT000295). As such, the Westchester County Community Emergency Planning for Indian Point booklet is available in Spanish on the county website, and informational materials distributed at the county reception centers for evacuees are also available in Spanish. Westchester County Indian Point Emergency Guide (Spanish Translation) (ENT000296); Westchester REPP, Implementation Procedure 10, at 4 (ENT00285D). The County also has a comprehensive public outreach and information program, and maintains an ongoing working relationship with the news media, including those that serve non-English speaking communities. Westchester County Emergency Plan at Vol. 2, Procedure 10, § 3.10 (ENT00285D).

Q76. Please describe the emergency plans as those plans relate to children in head-start programs.

A76. (MJS) Although head-start programs, nursery schools, and day care are not individually addressed in County plans, they are captured by other planning categories. The NYS 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. *See* NY CLS Social Service § 390 2-a (a) (ENT000281). Every facility under OCFS control is required to have an emergency plan. 18 NYCRR § 414.5(b) (ENT000297); *see also* Westchester County Indian Point Emergency Guide at 7 (ENT000287) (“Parents of children attending Day Care Facilities or Nursery Schools in the Indian Point Emergency Planning Zone (EPZ) should contact that facility or schools administration to learn more about their individual emergency plans.”).

Q77. Does this information about Indian Point emergency plans support 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?

A77. (MJS) Yes. The conclusion that severe accidents would not result in disproportionately high and adverse human health and environmental effects on minority and low-income populations is supported by Indian Point, state, and local emergency plans, and by verified compliance with emergency planning regulations and requirements. In accordance with federal regulations and guidance, these plans give specific consideration to 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.

VIII. RESPONSE TO ISSUES RAISED IN CONTENTION CW-EC-3A

A. Rebuttal to Dr. Edelstein's Testimony

Q78. Please summarize the primary claims made in Dr. Edelstein's testimony.

A78. (DPC, JLR, MJS) Dr. Michael Edelstein's testimony and report raise various issues related to emergency plan adequacy at the Sing Sing and Rockland County Correctional Facilities. *See* Testimony of Dr. Michael Edelstein in Support of Hudson River Sloop Clearwater, Inc.'s Contention Regarding Environmental Justice at 1-5 (Nov. 6, 2011) (CLE000003) ("Edelstein Testimony"); Michael R. Edelstein, *Environmental Justice Impacts from the Proposed Relicensing of the Indian Point Nuclear Power Complex: A Focus on Sing Sing Prison* at 2 (Oct. 5, 2011) (CLE00012A) ("Edelstein Report"). The crux of Dr. Edelstein's assessment is found in his report, which he incorporates as part of his testimony, and focuses on the adequacy of emergency planning at Sing Sing, as well as the potential for radiological and "psycho-social" impacts on its inhabitants. *See* Edelstein Report at 2 (CLE00012A). Dr. Edelstein also purports to address lessons learned from the Fukushima accident in Japan, as well as alleged non-nuclear emergency planning and evacuation issues associated with Hurricane Katrina. *See* Edelstein Testimony at 4 (CLE000003).

Q79. On page 2 of his prefiled testimony, Dr. Edelstein states that the FSEIS "fails to mention" Sing Sing in the environmental justice evaluation. Did the FSEIS fail to include Sing Sing in its environmental justice evaluation?

A79. (JLR) No. The environmental justice demographic analysis presented in the ER and the FSEIS includes Sing Sing. As discussed previously in Section V, Sing Sing is included among minority census Block Group counts in Table 2-7A and Figures 2-8 through 2-23 of the

ER (ENT00015B) and Figure 4-5 of the FSEIS (NYS00131B). Census Block Groups that contain correctional facilities and also meet NRC's environmental justice criteria are identified in the ER and the FSEIS, including the Block Group that contains Sing Sing.

Q80. On page 2 of his prefiled testimony, Dr. Edelstein states that “[t]here is no doubt that during severe accident scenarios Sing Sing prisoners would be affected more severely than the general population.” Do you agree with this statement?

A80. (DPC, MJS) No. As discussed in Section VI, the NRC GEIS finds that the risk-based environmental consequences of severe accidents are SMALL for all plants. GEIS at 5-115 (NYS00131C). This conclusion is applicable to Indian Point and all populations that may be affected by a severe accident, irrespective of whether they are minority or low-income and whether they evacuate or shelter-in-place. Thus, the GEIS establishes that a severe accident would not result in disproportionately high and adverse human health and environmental effects on minority and low-income populations.

Further, Dr. Edelstein states that his specialty is psycho-social impact assessment, but his resume does not identify any expertise in emergency planning, health physics, nuclear reactor safety, or severe accident phenomena. *See* Edelstein Report at 2 (CLE00012A). Nonetheless, he states his view that sheltering-in-place is ineffective and will inherently result in Sing Sing prisoners being affected “more severely.” Edelstein Testimony at 2 (CLE000003). His belief that shelter-in-place is somehow an inferior protective action is unsupported. As discussed in detail in Section VII of our testimony, shelter-in-place as an appropriate protective action option is fully in accordance with federal regulations and guidance documents. *See* 10 C.F.R. § 50.47(b)(10); NRC Regulatory Issue Summary 2004-13, Consideration of Sheltering in

Licensee's Range of Protective Action Recommendations (ENT000290); NUREG/CR-6953, Rev. 1, Supp. 3 (ENT000291); EPA 400-R-92-001, at 1-5 (ENT00284A).

Q81. On page 2 of his prefiled testimony, Dr. Edelstein cites a 1981 Westchester County letter to the NRC (Letter from C. Bates to A. DelBello (Feb. 23, 1981) (CLE000013)) and indicates "Sing Sing would probably not be evacuated even in the most dire emergency" and that Westchester "stated that there was no plan and complained this was insane and showed a lack of respect for the lives of the prisoners." Do you agree with Dr. Edelstein's statement?

A81. (MJS) No. Dr. Edelstein's citation to a more than thirty-year old letter is not relevant to current emergency plans. *See* Edelstein Testimony at 2 (CLE000003). As discussed above in Section VII, New York State officials would determine whether or not to evacuate Sing Sing prison subsequent to a severe accident at Indian Point and would weigh avoidable radiological risks and potential risks to the prisoners and general population from evacuation. Due to a number of factors, sheltering would likely be the appropriate protective action, but nothing in state or local emergency plans suggests that Sing Sing prisoners would not be evacuated if deemed appropriate.

Q82. Please address Dr. Edelstein’s reference to problems with evacuations in Louisiana during Hurricane Katrina and whether that impacts your conclusions.

A82. (DPC, MJS) Clearwater’s references to reports, including the 2006 ACLU Report, “Abandoned and Abused: Orleans Parish Prisoners in the Wake of Hurricane Katrina” (CLE000044), discussing reported problems with evacuations in Louisiana during Hurricane Katrina do not support its argument that an accident at Indian Point would result in disproportionately high and adverse human health and environmental effects to environmental justice populations. *See* Edelstein Report at 7-11, 13, 19 (CLE00012A); *id.* at 21-23, 26-28, 31-38 (CLE00012B); *id.* at 39-48 (CLE00012C). To the contrary, an NRC-sponsored study assessing Hurricanes Katrina, Rita, and Wilma, and other large scale evacuations, found that current emergency plans for nuclear power plants already address the lessons learned in the large scale evacuations studied (including issues identified as part of the Hurricane Katrina evacuations). *See* NUREG/CR-6981, Assessment of Emergency Response Planning and Implementation for Large Scale Evacuations at 65 (Oct. 2008) (“NUREG/CR-6981”) (ENT000298).

Further, nothing in the NRC study even remotely suggests that sheltering, rather than evacuating, results in disproportionately high and adverse human health and environmental effects to prisoners or other institutionalized environmental justice populations in the event of a radiological incident. The NRC report states that even when evacuations were required after Hurricane Katrina (*e.g.*, due to flooding), over 6,000 prison inmates were safely evacuated. NUREG/CR-6981 at 13 (ENT000298).

Q83. On page 5 of his pre-filed testimony, Dr. Edelstein states that the Fukushima accident “shows that releases of radiation from nuclear accidents can be long term and sustained” and that “significant contamination can occur in the zone close to the reactor,” which “makes it even more imperative to carefully assess and then mitigate the effects of a severe accident at the Indian Point reactors on the Sing Sing population.” Do you agree with this statement?

A83. (MJS, DPC) No. Since the issuance of the FSEIS, the NRC has considered and continues to review the events associated with the nuclear power plant accident at Fukushima Dai-ichi, Japan, which commenced in March 2011, following a large earthquake and tsunami. Since then, however, the NRC has continued its long-standing NEPA approach, focusing on the probability-weighted consequences of severe accidents. *See S. Nuclear Operating Co.* (Vogle Elec. Generating Plant, Units 3 & 4), CLI-12-02, slip op. at 74 (Feb. 9, 2012). As discussed previously, the GEIS found the probability-weighted consequences of severe accidents to be of SMALL significance for all plants, and this finding still applies. GEIS at 5-115 (NYS00131C).

Q84. Has the NRC proposed expanding the 10-mile EPZ around Indian Point following the recent Fukushima events in Japan?

A84. (MJS) No. The NRC has made clear that the existing emergency preparedness framework and regulations continue to provide reasonable assurance of adequate protection of public health and safety in the event of a radiological emergency. *See Letter from W. Dean, NRC, to M. Kaplowitz, Westchester County Board of Legislators, District #4, at 1-3 (July 28, 2011) (ENT000299).*

B. Rebuttal to Ms. Greene’s Testimony

Q85. Please summarize the primary claims made in Ms. Greene’s testimony.

A85. (DPC, JLR, MJS) Ms. Greene primarily testifies about “interviews” Clearwater conducted with certain residents and staff at various facilities near Indian Point to assess their level of emergency preparedness and ability to evacuate. *See* Initial Prefiled Written Testimony of Manna Jo Greene Regarding Clearwater’s Environmental Justice Contention EC-3A at 3-4, 6-29 (Dec. 22, 2011) (“Greene Testimony”) (CLE000010). Based on these interviews, which were not transcribed or otherwise produced as evidence by Clearwater, Ms. Greene concludes that “the level of emergency preparedness varies considerably among the various facilities,” “[r]euniting children with their parents is also problematic,” and, “[w]hile Clearwater questions the viability of any emergency evacuation for everyone . . . around Indian Point, . . . much better outreach and disaster preparedness is needed for institutions that house poverty-stricken or low-income, disabled, minority and non-English-speaking populations.” *Greene Testimony* at 29 (CLE000010).

Q86. Have you reviewed Clearwater’s list of alleged environmental justice facilities in the vicinity of Indian Point (CLE000032) and Ms. Greene’s related testimony?

A86. (JLR, DPC) Yes. As an initial matter, Ms. Greene’s testimony focuses on individuals or facilities rather than populations. In particular, she focuses on: transportation-dependent individuals, non-residential day care centers and head start programs, nursing homes, hospitals, non-institutional affordable housing communities, emergency services providers, and various other facilities—none of which fits the definition of an environmental justice population as that term is defined in NRC guidance.

Q87. Does your review of Ms. Greene’s testimony, summarizing Clearwater’s interviews, change your opinion that the ER and FSEIS properly identify environmental justice populations?

A87. (JLR, DPC) No. Both the ER and the FSEIS follow NRC guidance and use U.S. Census Block Group data to identify any environmental justice populations. There is no requirement in NRC regulations or guidance, or NEPA for that matter, that requires the FSEIS to provide a facility-by-facility, as opposed to a population-based, environmental justice analysis of the type that Clearwater seeks. Further, it appears that many of the *facilities* listed by Clearwater do not even contain environmental justice *populations*. For example, there is no indication that Robert Yeager Health Center or Bethel Springvale Inn contain environmental justice populations. As a result, Clearwater’s testimony goes beyond the well-established definition of environmental justice populations to address other large segments of the general population such as the elderly, disabled, children, and people without cars. *See* NRC Environmental Justice Policy Statement, 69 Fed. Reg. at 52,047 (ENT000260).

Q88. Do emergency plans address the populations addressed in Ms. Greene’s interviews?

A88. (MJS) Yes. As discussed above in Section VII, consistent with federal regulations and in accordance with state law, NYS and county emergency plans address and provide reasonable assurance of adequate protection of transportation-dependent populations, individuals in correctional facilities, nursing homes, hospitals, head-start programs, and Spanish-speaking populations. *See also* NYS Executive Law Article 2-B §§ 23(1), 29-h (6)(b) (“Executive Law 2-B”) (ENT000283).

C. Rebuttal to Mr. Papa's Testimony

Q89. Please summarize the primary claims made in Mr. Papa's testimony.

A89. (DPC, JLR, MJS) Mr. Papa's testimony discusses his incarceration and release from Sing Sing, U.S. drug policy, his work for the Drug Policy Alliance, and his personal views concerning emergency planning deficiencies at Sing Sing. *See* Initial Pre-Filed Testimony of Anthony Papa in Support of Hudson River Sloop Clearwater, Inc.'s Contention Regarding Environmental Justice (EC-3A) at 2-4 (Nov. 28, 2011) ("Papa Testimony") (CLE000004). In discussing such matters, he claims 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 Testimony at 3, 4 (CLE000004).

Q90. On page 4 of his prefiled testimony, Mr. Papa states that Sing Sing is unsuitable for sheltering-in-place because it does not have effective ventilation and that the temperature inside the prison would be unbearable during the summer without open windows. Does this statement affect your conclusion that a severe accident would not result in disproportionately high and adverse human health and environmental effects at Sing Sing?

A90. (MJS) No. As an initial matter, Mr. Papa's testimony documents no expertise in emergency management in general, or in radiological emergency management specifically. *See* Papa Testimony at 1-5 (CLE000004). Further, as discussed in response to Questions 69-71, Sing Sing has emergency plans that include provisions for sheltering-in-place and evacuation, which are regularly reviewed and approved by FEMA. As a former prisoner at Sing Sing, Mr. Papa likely would be unaware of the detailed plans and capabilities of Sing Sing for sheltering-in-place or taking actions beyond sheltering-in-place.

D. Rebuttal to Ms. Guardado’s Testimony

Q91. Please summarize the primary claims made in Ms. Guardado’s testimony.

A91. (DPC, JLR, MJS) Ms. Dolores Guardado, a resident of Peekskill and member of its Hispanic community, raises various issues related to the Hispanic community in Peekskill and Indian Point emergency plans, including KI distribution and evacuations. *See* Initial Prefiled Written Testimony of Dolores Guardado Regarding Clearwater’s Environmental Justice Contention EC-3A (“Guardado Testimony”) (Dec. 22, 2011) (CLE000008) (prepared in Spanish with English translation).

Q92. On pages 3 through 5 of her prefiled testimony, Ms. Guardado indicates that Spanish speaking people will have difficulty during evacuation because of the language barrier. Do you agree with this statement?

A92. (MJS) No. Emergency plans adequately address communicating emergency preparedness information to the Spanish speaking population. *See* Westchester REPP, Implementation Procedure 10, at 4 (ENT00285D). Further, as discussed above in Section VII, comprehensive federal regulations ensure messages pertaining to radiological emergencies are pre-scripted in non-English languages that are spoken by more than 5 percent of each county’s voting age population. FEMA REPP Manual at Page II-33 (ENT000295). In Westchester County, this requirement covers the Spanish speaking population.

E. Rebuttal to Mr. Mair’s Testimony

Q93. Please summarize the primary claims made in Mr. Mair’s testimony.

A93. (DPC, JLR, MJS) Mr. Mair does not address the potential for disparate impacts on institutional environmental justice populations in the event of a severe accident. Instead, Mr. Mair provides background on (1) the environmental justice movement; (2) the demographics of the City of Peekskill, with no discussion of institutional populations; (3) impacts from landfills

and other industrial facilities in Peekskill; and (4) emergency planning issues related to automobile ownership rates and local terrain and roads, which are not the subject of this contention. *See* Initial Prefiled Written Testimony of Aaron Mair at 6-11 (Dec. 20, 2011) (CLE000007) (“Mair Testimony”).

Q94. In his prefiled testimony, Mr. Mair indicates that low car ownership rates and the topography in City of Peekskill’s topography, as well as the potential for “shadow evacuations,” present emergency planning difficulties that may result in a disparate impact. *See* Mair Testimony at 7-11. Do you agree with this statement?

A94. (MJS) Indian Point emergency planning specifically considers all of these issues. *See, e.g.*, Indian Point Energy Center, Development of Evacuation Travel Time Estimates (KLD TR-369) Rev. 2 at 7.1, 7.2; App. D, D1-D4, App. F; App. I (October 2004) (ENT000014). Further, the Indian Point and New York State emergency plans specifically provide that state and county governments will provide assistance for those who cannot evacuate on their own. *See* Indian Point Emergency Plan § J.10.d (CLE000042); NYS REPP at III-35 (ENT000272).

F. Rebuttal to Mr. Filler’s Testimony

Q95. Please summarize the primary claims made in Mr. Filler’s testimony.

A95. (DPC, MJS) Mr. Filler makes assertions related to emergency plan adequacy, including issues related to the adequacy of food and water supplies at certain medical facilities that might shelter-in-place rather than evacuate, transit-dependent individuals, and maintenance of an “up-to-date list of the location of non-institutionalized mobility-impaired individuals.” *See* Initial Prefiled Written Testimony of Stephen Filler Regarding Clearwater’s Environmental Justice Contention EC-3A at 1-3 (Dec. 20, 2011) (“Filler Testimony”) (CLE000009). Portions of Mr. Filler’s testimony also focus on non-institutional or non-environmental justice populations. Filler Testimony at 2-3 (CLE000009).

Q96. On page 2 of his prefiled testimony, Mr. Filler states that the Westchester County Emergency Plan “expressly recognizes that there is a likelihood that environmental justice populations . . . will be treated disparately by being sheltered in place when they ‘should be evacuated.’” Do you agree?

A96. (DPC, MJS) No. Westchester County’s Emergency Plan addresses sheltering as a preferred protective action for certain population groups, generally those for whom evacuation introduces a greater exposure risk than sheltering-in-place. *See* Westchester REPP at III-30 (ENT00285A). For example, the Westchester County Emergency Plan states that “[t]he Selective Shelter-in-place Response Option gives the County Executive the capability of implementing effective protective action for individuals who could not be safely evacuated if a Selective or General Evacuation was necessary.” Nothing in the Westchester County Emergency Plan restricts the protective actions that might be taken to any particular population group. In this regard, fully consistent with federal guidance, the Westchester County Emergency Plan specifically seeks to minimize the potential for harm to all populations, including environmental justice populations.

G. Rebuttal to Dr. Larsen’s Testimony

Q97. Please summarize the primary claims made in Dr. Larsen’s testimony.

A97. (DPC, MJS) As an initial matter, Dr. Larsen’s testimony does not focus on the potential for disparate impacts on institutional environmental justice populations in the event of a severe accident. Instead, Dr. Larsen’s testimony describes a single experience treating a worker from Indian Point, discusses local emergency medical response capabilities, and focuses on hospital patients in general. *See* Initial Prefiled Written Testimony of Erik A. Larsen, MD, FACEP Regarding Clearwater’s Environmental Justice Contention EC-3A at 2-3 (Dec. 20, 2011) (“Larsen Testimony”) (CLE000005).

Q98. On page 2 of his prefiled testimony, Dr. Larsen describes his single experience treating a worker from Indian Point. What relevance, if any, does Dr. Larsen’s account have to CW-EC-3A and environmental justice populations?

A98. (MJS) It does not have any relevance to environmental justice populations or this contention.

H. Rebuttal to Mr. Simms’ Testimony

Q99. Please summarize the primary claims made in Mr. Simms’ testimony and indicate whether it impacts the conclusions in your testimony.

A99. (DPC, JLR) Mr. John Simms, a retiree living in Bethel Springvale Inn, testifies about his knowledge of Bethel Springvale Inn demographics and emergency planning. *See* Testimony of John Simms in Support of Hudson River Sloop Clearwater, Inc.’s Contention Regarding Environmental Justice (Nov. 22, 2011) (CLE000006) (“Simms Testimony”). As an initial matter, as Mr. Simms recognizes himself, the residents of Bethel Springvale Inn do not constitute a low-income population. Simms Testimony at A9 (CLE000006) (“Overall, I would say the average person here is at least middle class, but I do not know of any criteria.”). Nor

does the location of Bethel Springvale Inn fall within a minority Block Group. Thus, Mr. Simms' testimony is not relevant to the issues in CW-EC-3A.

IX. CONCLUSIONS

Q100. Please summarize your testimony and the bases for your conclusions regarding CW-EC-3A.

A100. (DPC, JLR, MJS) Entergy and NRC Staff properly identify environmental justice populations within a 50-mile radius of Indian Point by using census Block Group data, consistent with NRC guidance. Because referenced census data specifically accounts for persons living in Group Quarters, the populations inside correctional institutions and numerous other facilities are inherently evaluated. Accordingly, the ER and the FSEIS properly identify minority and low-income populations as part of the Indian Point environmental justice analysis.

The vast majority of Clearwater's testimony focuses on the adequacy of Indian Point emergency and evacuation plans, which is outside the scope of CW-EC-3A and this proceeding. And although it appears that none of Clearwater's witnesses have any expertise in emergency planning, severe accident evaluation, or health physics, we nevertheless address Clearwater's various unsupported claims that minority and low-income populations would be disproportionately impacted in the event of a severe accident at Indian Point, and show they are without merit for several reasons.

First, Clearwater's disproportionate impact claim is contrary to NRC regulations and to the GEIS conclusion that for all plants, the probability weighted consequences from severe accidents are small. This GEIS conclusion remains valid and applicable to Indian Point irrespective of whether members of the public are minority or low income, or whether they evacuate or shelter in place.

Second, 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 radiological emergency, including any individuals in institutions such as prisons. These plans give specific consideration to 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.

Third, to the extent Clearwater asserts that improvements to local emergency evacuation plans are needed, such issues are beyond the scope of this proceeding notwithstanding Clearwater's characterization of such claims as "mitigation."

Q101. Does this conclude your testimony?

A101. (DPC, JLR, MJS) Yes.

Q102. In accordance with 28 U.S.C. § 1746, do you state under penalty of perjury that the foregoing testimony is true and correct?

A102. (DPC, JLR, MJS) Yes.

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

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