ORAL ARGUMENT NOT YET SCHEDULED

Nos. 14-1210, 14-1212, 14-1216, 14-1217 (consolidated)

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF NEW YORK, *et al.*; PRAIRIE ISLAND INDIAN COMMUNITY; BEYOND NUCLEAR, INC., *et al.*; and NATURAL RESOURCES DEFENSE COUNCIL, INC., *Petitioners*,
and
COMMONWEALTH OF MASSACHUSETTS, *Intervenor-Petitioner*,
v.
UNITED STATES NUCLEAR REGULATORY COMMISSION and THE UNITED STATES OF AMERICA, *Respondents*,
and
NUCLEAR ENERGY INSTITUTE, INC., *et al.*, *Intervenor-Respondents.*

On Petition for Review of Final Action by the U.S. Nuclear Regulatory Commission

INITIAL CONSOLIDATED ANSWERING BRIEF OF INTERVENOR-RESPONDENTS NUCLEAR ENERGY INSTITUTE, ENTERGY NUCLEAR OPERATIONS, INC., AND NORTHERN STATES POWER COMPANY

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September 11, 2015

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

In accordance with Circuit Rule 28(a)(1), the Nuclear Energy Institute, Entergy Nuclear Operations, Inc., and Northern States Power Company submit this certificate as to parties, rulings, and related cases.

A. Parties, Intervenors, and *Amici* in Case No. 14-1210 and Consolidated Cases

All parties, intervenors, and *amici curiae* appearing in this Court are listed in the Brief for Respondents United States and the Nuclear Regulatory Commission.

B. Rulings Under Review

References to the rulings under review appear in the Brief for Respondents United States and the Nuclear Regulatory Commission.

C. Related Cases

This proceeding consists of four consolidated cases.

The lead case is *The State of New York, et al. v. United States Nuclear Regulatory Commission, et al.,* Case No. 14-1210.

Three cases following the lead case were consolidated: (1) *Prairie Island Indian Community v. United States Nuclear Regulatory Commission, et al.,* Case No. 14-1212; (2) *Beyond Nuclear, Inc., et al. v. United States Nuclear Regulatory Commission, et al.*, Case No. 14-1216; and; (3) *Natural Resources*

Defense Council, Inc. v. United States Nuclear Regulatory Commission, et al., Case No. 14-1217.

Additional cases related to this proceeding but not consolidated are identified in the Brief for Respondents United States and the Nuclear Regulatory Commission (*see* Certificate as to Parties, Rulings, and Related Cases).

CORPORATE DISCLOSURE STATEMENT FOR THE NUCLEAR ENERGY INSTITUTE

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1 of this Court, the Nuclear Energy Institute, Inc. ("NEI") represents that it is a non-profit corporation exempt from taxation pursuant to Section 501(c)(6) of the Internal Revenue Code. NEI functions as a trade association representing the nuclear energy industry. Its objective is to ensure the development of policies that promote the beneficial uses of nuclear energy and technologies in the United States and around the world. NEI has no parent companies, and no publicly held company has a 10% or greater ownership interest in NEI.

Respectfully submitted,

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CORPORATE DISCLOSURE STATEMENT FOR ENTERGY NUCLEAR OPERATIONS, INC.

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1 of this Court, Entergy Nuclear Operations, Inc. represents that it is the operator and holder of the NRC operating licenses for the Indian Point Units 2 and 3 nuclear plants, located in New York, and the Vermont Yankee Nuclear Plant, which is located in Vermont. Petitioner further represents that Entergy Nuclear Operations, Inc. is a wholly owned subsidiary of Entergy Nuclear Holding Company #2, which in turn is a wholly owned subsidiary of Entergy Corporation. Direct or indirect subsidiaries of Entergy Corporation also own and operate, among other nuclear power plants, the James A. FitzPatrick Nuclear Power Plant in New York, the Pilgrim Nuclear Power Station in Massachusetts, and the Palisades Power Plant in Michigan. Entergy Corporation is the only publicly held corporation in this chain of ownership and, through its subsidiary, owns more than 10% of Entergy Nuclear Operations, Inc.

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CORPORATE DISCLOSURE STATEMENT FOR NORTHERN STATES POWER COMPANY

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1 of this Court, Northern States Power Company, a Minnesota Corporation ("NSPM"), is a direct, wholly owned utility subsidiary of Xcel Energy Inc. No other publicly held company has 10 percent or more equity interest in NSPM. NSPM owns and operates the Prairie Island Nuclear Generating Plant, Units 1 and 2, and the Prairie Island Independent Storage Facility, near Red Wing, Minnesota, and the Monticello Nuclear Generating Plant, in Monticello, Minnesota.

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GLOSSARY

CEC	California Energy Commission
CI	Certified Index of Record
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
GEIS	Generic Environmental Impact Statement
NRDC	Natural Resources Defense Council, Inc.
NEI	Nuclear Energy Institute
NEPA	National Environmental Policy Act
NSPM	Northern States Power Company
NRC	U.S. Nuclear Regulatory Commission

I. JURISDICTIONAL STATEMENT

Intervenor-Respondents Nuclear Energy Institute, Entergy Nuclear Operations, Inc., and Northern States Power Company agree with the Statement of Jurisdiction in the Brief for Respondents United States and the Nuclear Regulatory Commission ("NRC" or "Commission").

II. STATEMENT OF ISSUES FOR REVIEW

Intervenor-Respondents agree with the Statement of Issues for Review set forth in the Brief for Respondents.

III. STATUTES AND REGULATIONS

Except for the statutes and regulations provided in the separately bound addendum, all applicable statutes and regulations are contained in the Initial Brief of Federal Respondents.

IV. STATEMENT OF CASE

In *New York v. NRC*, 681 F.3d 471 (D.C. Cir. 2012) ("*New York I*"), this Court vacated and remanded NRC's Waste Confidence Decision and Temporary Storage Rule. The Court found that the rulemaking was a major federal action requiring either a Finding of No Significant Impact ("FONSI") or an Environmental Impact Statement ("EIS"). *Id.* at 477. The Court found NRC's Environmental Assessment ("EA") inadequate under the National Environmental Policy Act ("NEPA") because it did not: (1) evaluate environmental impacts of a failure to develop a high-level waste repository; (2) properly consider potential

future impacts from spent fuel pool leaks; and (3) account for consequences of potential spent fuel pool fires. *Id.* at 478-82.

On remand, NRC prepared a comprehensive Generic Environmental Impact Statement ("GEIS") for Continued Storage of Spent Nuclear Fuel.[1] NRC conducted a robust notice-and-comment process with 13 public meetings and evaluated over 1,000 substantive comments, resulting in a two-volume, 1,400-page analysis.

NRC considered the environmental impacts of continued storage in three timeframes. The "short-term" timeframe — which NRC considers most likely — assumes that a disposal repository will become available by the end of 60 years beyond the licensed life for a reactor. The "long-term" timeframe assumes continued storage for an additional 100 years beyond the first timeframe. The "indefinite" timeframe — which NRC considers highly unlikely — assumes a repository never becomes available.

For each timeframe, the GEIS discusses consequences of storage based on well-supported assumptions regarding institutional controls and handling of spent fuel. NRC codified the GEIS's conclusions in revised 10 C.F.R. § 51.23

[1] CI-1052/53: NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Fuel," September 2014.

(and related regulations) (the "Continued Storage Rule"). 79 Fed. Reg. 56,238 (Sept. 19, 2014).

Two sets of petitioners challenge the Continued Storage Rule and GEIS as inadequate to satisfy NEPA. The States and Tribe[2] argue that the GEIS does not account for site-specific variations with respect to risks of spent fuel pool leaks and fires. Further, they challenge the assumptions that fuel will be removed from spent fuel pools and placed in dry cask storage within the "short-term" timeframe, that dry casks containing spent fuel will be replaced every 100 years thereafter (if necessary), and that short-term, high-volume spent fuel pool leaks would have minimal impacts. Finally, the States argue that the GEIS inadequately addresses measures to mitigate the impacts of fires and leaks.

Petitioner Organizations[3] argue that the GEIS incorrectly identifies the proposed action and therefore fails to consider an alternative of denying all nuclear reactor license applications to avoid generating more spent fuel. The Organizations also claim that NRC should have considered alternatives such as limits on high-burnup fuel to mitigate consequences. They further argue that the

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[2] The "States" are New York, Vermont, Connecticut, and Massachusetts. The "Tribe" is the Prairie Island Indian Community. Collectively, they are referred to as "States."

[3] The "Organizations" are a group of nine public interest organizations identified in the brief filed by Natural Resources Defense Council ("NRDC"), *et al.*

GEIS is insufficient because it does not discuss: the probability of a failure to site a repository; a "no repository" scenario coupled with a loss of institutional controls; and cumulative impacts of storing and disposing spent fuel resulting from future licensing decisions.

V. STATEMENT OF FACTS

The Continued Storage Rule addresses a discrete NEPA issue: the environmental impacts of continuing spent fuel storage after the licensed term of a reactor — either at a reactor site or at an interim storage facility. It is not a licensing action. Rather, it codifies the GEIS's conclusions so they can be weighed along with other impact conclusions in individual licensing decisions. GEIS conclusions are not subject to challenge in individual cases absent a waiver under 10 C.F.R. § 2.335.

The GEIS is one part of the NEPA evaluation for individual licensing actions. Separate from the environmental impacts of continued storage, NRC considers the impacts of reactor operations, including spent fuel *storage* during the license term, in connection with individual licensing actions. These issues are addressed in site-specific EISs for initial licenses, and a GEIS and site-specific supplemental EISs for license renewal. NRC also considers the environmental impacts of spent fuel *disposal* generically in a separate rule, 10 C.F.R. § 51.51(b), Table S-3.

Under the Nuclear Waste Policy Act,[4] Congress assigned the responsibility for spent fuel disposal to the Department of Energy ("DOE"); specified a duty for DOE to develop a repository at Yucca Mountain subject to NRC approval; and provided the means (the Nuclear Waste Fund) to pay for the repository based on fees paid by nuclear generators. NRC and DOE are responsible for a separate EIS in connection with a proposed repository (and DOE has prepared an EIS for Yucca Mountain). NRC must review and render a decision on DOE's repository license application.

VI. SUMMARY OF ARGUMENT

Petitioners ask the Court to delve into the details of complex technical analyses well within NRC's expertise, and then have the Court apply its own judgment to come to a different result. The Court, however, should decline such a role. The Continued Storage GEIS comprehensively discloses the environmental impacts of storing spent fuel after reactor operations until disposal at a repository. The GEIS also addresses the three specific issues identified by this Court in *New York I*. Against the deferential Administrative Procedure Act and NEPA standard of review, the GEIS reflects a "hard look" at the impacts of continued spent fuel storage, even for an extreme case of an indefinite period with no repository.

[4] 42 U.S.C. §§ 10101-10270.

The GEIS addresses the probability and consequences of spent fuel pool leaks and fires — issues that are relevant only in the "short-term" timeframe until the pools are unloaded. The GEIS concludes that the probability of spent fuel pool fires is "extremely low" at all sites; that the potential consequences should one occur are potentially "significant and destabilizing"; but that the overall risk (probability-weighted consequences) is small for all sites. The GEIS concludes that the impacts of reasonably foreseeable leaks are small at all sites. NRC applied its expertise, examined the relevant data, responded to comments, addressed uncertainties, and explained the bases for its conclusions. This fully meets NEPA's "rule of reason."

Petitioners challenge certain assumptions in the GEIS, including the assumption that institutional controls will exist in the indefinite "no repository" scenario. However, NRC reasonably explained the bases for its assumptions. And with respect to institutional controls, Petitioners fail to show that scenario is anything other than "remote and speculative" and far removed from the natural consequences of an NRC licensing decision. Without any obligation to do so, NRC even disclosed the significant consequences associated with this postulated "worst case" scenario, comparing it to the "no action alternative" in the Yucca Mountain EIS. Petitioners do not demonstrate what further analysis could reasonably be performed, much less what further disclosure is required.

Petitioners challenge NRC's failure to discuss alternatives such as denying all reactor license applications or requiring additional mitigation measures. However, regardless of how it defined the proposed action, NRC will consider "no licensing" and mitigation alternatives in other NEPA analyses in connection with individual licensing actions. Petitioners ignore these NEPA reviews. Because no relevant issue for licensing decisions escapes consideration under this approach, NRC has complied with NEPA.

VII. ARGUMENT

A. The Standard of Review is Highly Deferential

Under NEPA, the court's role in evaluating an agency action "is simply to ensure that the agency has adequately considered and disclosed the environmental impact of its actions and that its decision is not arbitrary and capricious." *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 723 (3d Cir. 1989) (internal citations omitted). "So long as the officials and agencies have taken the 'hard look' at environmental consequences mandated by Congress, the court does not seek to impose unreasonable extremes or to interject itself within the area of discretion of the executive as to the choice of the action to be taken." *NRDC v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972).

B. The Evaluation of Continued Storage Impacts Is Appropriately Generic

1. NEPA Allows Generic Reviews

This Court in *New York I* recognized that the Supreme Court has endorsed the Commission's longstanding practice of considering environmental issues through generic rulemaking. 681 F.3d at 480 (*citing Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 100 (1983)). The Court stated:

> [W]e see no reason that a comprehensive general analysis would be insufficient to examine on-site risks that are essentially common to all plants. This is particularly true given the Commission's use of conservative bounding assumptions and the opportunity for concerned parties to raise site-specific differences at the time of a specific site's licensing.

Id. at 481. NRC used a bounding approach here. And the agency's rules allow a petitioner in a site-specific proceeding to seek a waiver if there are special circumstances such that applying a regulation would not serve the purpose for which it was adopted. Therefore, to the extent that any petitioner believes that the GEIS does not appropriately bound the environmental impacts at a particular site, it may seek to waive the Continued Storage Rule in proceedings for that site.

2. NRC's Evaluation of Spent Fuel Pool Fires Considers All Sites

The States challenge the GEIS discussion of spent fuel pool fires. They assert that the probability of a fire depends on site-specific characteristics, "including the likelihood of earthquakes" and the characteristics of the spent fuel at each site. States Br. at 26. They further assert that the consequences of a fire depend on the "characteristics of the surrounding area, including the density of the population, the economic value of the real estate, and any other particularized features." *Id.* at 27. The States argue NRC failed to bound the "range of impacts likely to be encountered across the country," and emphasize the population density at the Indian Point site near New York City as compared to the Surry plant in Virginia. *Id.* at 31. But NRC's thorough analysis of fires considered site variations and used conservative bounding assumptions.

The GEIS — Appendix F — considers impacts of spent fuel fires based on both their low probability and potentially severe consequences. This Court endorsed this risk-based approach to evaluating uncertain and unlikely environmental impacts in *Carolina Envtl. Study Grp. v. United States*, 510 F.2d 796 (D.C. Cir. 1975), and in *New York I*, 681 F.3d at 478-79. NRC concluded that differences from site to site would not significantly affect the overall risk (and therefore the small environmental impact) of spent fuel pool fires. GEIS at D-83, D-101-02. The States urge the Court to review the details of a complex technical

analysis, one well within NRC's expertise, and rewrite the GEIS to come to a different result or further emphasize the States' concerns.

NRC recognized that variations cited by the States in plant designs, site characteristics, and fuel types exist. *See, e.g.*, GEIS at F-7 (health impacts could be higher or lower than values reported in prior studies, depending upon the amount of material in a pool, the fraction of the material involved in a fire, total population, and population density). Even accounting for these variations, NRC determined that the probability of a spent fuel pool fire is "extremely low" for all plants. *Id.* at F-1. GEIS Table F-1 also presents consequences "without any consideration of the remote probability of an accident." Consequences include cumulative dose, cost to the economy, and area of land contamination. *Id*. at F-5. NRC described these potential consequences as "significant and destabilizing." *Id*. at F-9.

Addressing overall risk, GEIS Table F-2 presents probability-weighted consequences, which NRC determined to be comparable to risks for severe reactor accidents identified in previous studies. *Id*. at F-12-13. Based on its consideration of both probability and consequences, NRC found the impact of spent fuel fires to be small for all sites.[5] NRC's analysis therefore remedied the

[5] The risk exists predominately at the beginning of the "short-term" timeframe and decreases as spent fuel cools. *Id.* at F-11.

issue identified by the Court in *New York I* and satisfied its disclosure obligations under NEPA. *See Tri-Valley Cares v. DOE*, 671 F.3d 1113, 1126 (9th Cir. 2012) ("[U]nder NEPA, we must refrain from acting as a type of omnipotent scientist, and instead must restrict ourselves to inquiring only whether an agency took a 'hard look' at potential environmental impacts of an issue.").

NRC explained that conservatisms in its analysis also offset site variations. For example, NUREG-1738 (CI-976), NRC's 300+ page study and the basis for the GEIS assessment of fires, included conservatisms resulting in an overstatement of the probability of a fire. *Id.* at F-14. NRC observed that mitigation measures implemented by all licensees after NUREG-1738 was completed have lowered the probability of fires. *Id.* at F-16. NRC also overestimated the consequences by selecting "high" impact values based on a fire 30 days after a final reactor shutdown, when the release of radioactive material would be the "most severe." *Id.* at F-5. And NRC included an assumption of a "late evacuation," which further increased consequences. *Id.* at F-4.

Ignoring these built-in conservatisms, the States focus on one input — population density — and characterize NRC's fire analysis as being limited to rural Virginia. However, the very low frequency of the events necessary for a fire is based on extensive analysis in NUREG-1738, which is not limited to plants in rural Virginia. GEIS at F-10. Although NRC used the health consequences associated

with the Surry site, it considered how population density differences at other sites might impact those consequences. *Id.* at F-7. NRC compared those results to other existing studies examining sites with very high population densities. *Id.* at F-7-8. The GEIS acknowledges that total accident consequences could be greater at higher population sites, but notes that the risk to the typical individual "should not vary significantly with the size of the site-specific population around a plant because those risks are averaged (*i.e.*, determined by dividing the total number of cases by the affected population within the specified region)." *Id.* at F-8.[6]

NRC made a reasoned decision based on the relevant factors and the opinions of its own qualified experts. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 378 (1989). NEPA allows agencies "to select their own methodology as long as that methodology is reasonable." *Hughes River Watershed Conservancy v. Johnson*, 165 F.3d 283, 289 (4th Cir. 1999).

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[6] NRC reasonably explained its reliance on individual risk values, which can be meaningfully compared to both severe reactor accident risk values and the Quantitative Health Objectives in NRC's Safety Goal Policy Statement (51 Fed. Reg. 30,028). GEIS at D-318, F-14. The States challenge NRC's use of individual risk values, but they never alerted NRC to any existing standards that could serve as a meaningful benchmark by which to compare total population dose values. Moreover, giving total population risk even more prominence in the GEIS would tend to overstate risk by suggesting a very low individual dose in a high population area is more significant than a very high dose risk in a lower population area. *See id.* at F-4 n.3.

The GEIS also responded to related comments, concluding that, although a severe accident in an area with a higher population density would result in higher consequences, the probability of such an occurrence remains very low — meaning the overall risk remains low. *Id.* at D-144-45. It recognized that its evaluation of consequences of a fire is a "reasonable representation . . . for a typical site," but stated that its analysis includes assumptions that are "sufficiently conservative" to bound the probability-weighted impacts for all sites. *Id*. at D-424. NRC explained its basis, identified how site-specific variations would affect its conclusions, and disclosed uncertainties associated with quantifying the risk of a spent fuel pool fire. *Id.* at D-442-43.

The States quibble with NRC's analysis but in effect argue for a more dramatic — and unnecessary — discussion of a "worst case" scenario. *Robertson v. Methow Valley*, 490 U.S. 332, 354 (1989) (NEPA does not mandate that uncertainty in predicting environmental harms be addressed by a "worst case" analysis); *see also Balt. Gas*, 462 U.S. at 103 ("A reviewing court should not magnify a single line item beyond its significance as only part of a larger [analysis]"). The States primarily rely on *Limerick*, 869 F.2d at 738-39. States Br. 26, 28. But *Limerick* involved a challenge to NRC's failure to analyze severe reactor accident risk — in either a licensing proceeding or the policy statement that precluded the issue from site-specific consideration. 869 F.2d at 738-39. Here,

NRC prepared a GEIS analyzing fire risk. And, unlike *Limerick*, NRC still addresses mitigation alternatives in site-specific licensing reviews.

The States argue that the consequences of a release due to a spent fuel pool fire at Prairie Island would be "qualitatively different" than those at other sites, since the spent fuel pool is "located on the Tribe's ancestral homeland" and adjacent to its reservation. States Br. at 27. But they provide no explanation for why the consequences of a fire at Prairie Island would be so different to render inadequate NRC's probability-weighted analysis. The NRC in the GEIS addressed the Tribe's comments related to the application of a generic analysis to its reservation, including the Tribe's concerns about relocation and costs. GEIS at D-264-65. Moreover, other NRC site-specific NEPA evaluations for Prairie Island address impacts on cultural resources and mitigation. *See*, *e.g.*, "Final Environmental Assessment for the Proposed Renewal of the U.S. Nuclear Regulatory Commission License No. SNM-2506 for Prairie Island Independent Spent Fuel Storage Installation," Docket No. 72-0010 (June 2015) (ML15098A026) (evaluating potential storage impacts on cultural resources in numerous sections, including Sections 3.10 (historic and cultural resources), 4.10 (historical and cultural resources), 4.11.3 (environmental impacts/accidents), and 4.14 (cumulative impacts)).

Amicus California Energy Commission ("CEC") stresses the issue of seismic hazards in California and argues vaguely that the GEIS "treats all nuclear power plants as if they are seismically and geographically identical." CEC Br. at 26. But NRC addressed comments on site-specific earthquake risks, including for plants in California. GEIS at D-425. As the GEIS notes, NRC's regulations require each applicant for a reactor license to demonstrate that the facility is designed for the seismic hazards in the region involved. *See, e.g.*, *id.* at D-343 (citing 10 C.F.R. Part 50, Appendix A, Criterion 2). As a result, each licensed facility and storage system has a unique seismic design to assure adequate protection of safety. Therefore, the existence of seismic hazards at a particular site does not equate to greater risk of a pool fire.[7]

NEPA "does not require a crystal ball inquiry." *Morton*, 458 F.2d at 837 (internal quotations omitted). Nor does it call for certainty or precision. When faced with uncertainty, NEPA only requires "reasonable forecasting." *Scientists' Inst. For Pub. Info., Inc. v. AEC*, 481 F.2d 1079, 1092 (D.C. Cir. 1973). NRC's

[7] Moreover, before NRC makes a licensing decision, petitioners may raise seismic issues in site-specific proceedings. *See*, *e.g.*, *Pac. Gas & Elec. Co.* (Diablo Canyon Power Plant), ALAB-644, 13 NRC 903 (1981) (lengthy evidentiary hearing held on the adequacy of the seismic design).

analysis of spent fuel pool fires is thorough and conservative, and accounts for uncertainties. It fully complies with NEPA.[8]

3. NRC's Evaluation of Spent Fuel Pool Leaks Considers All Sites

The States challenge NRC's assessment of spent fuel pool leaks, arguing that the impacts of leaks depend upon site-specific factors such as a pool's radionuclide content and water chemistry, the distance to surface water, and local aquifer properties. States Brief at 29. The States further argue that the GEIS "does not discuss the types of atypical hydrological characteristics that might create adverse impacts." *Id.* at 32. But, in fact, NRC addressed these issues in detail.

The GEIS — Appendix E — looks forward, into the "short-term" storage period, when spent fuel is likely to remain in spent fuel pools for some of that period, to thoroughly analyze the likelihood and consequences of leaks. NRC's leaks evaluation is a detailed bounding analysis of the environmental impacts of reasonably foreseeable leaks at all sites. The States again urge the Court to engage in the details of a complex technical assessment and overrule NRC's expert judgment. But, again, NRC has discretion to rely on its own

[8] Under the Administrative Procedure Act, an agency is obligated only to "examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choices made." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks omitted).

qualified experts and methodologies. *Marsh*, 490 U.S. at 378; *Hughes River*, 165 F.3d at 289.

The GEIS describes spent fuel pool designs, maintenance requirements, and groundwater monitoring programs applicable for all sites. GEIS at E-2-7. The GEIS addresses the range of conditions at current and future sites, and identifies technical factors that apply at those sites to mitigate potential impacts should a leak occur. For example, because of siting requirements for nuclear plants (10 C.F.R. Part 100), present and future plants are located in areas with similar hydrogeological characteristics. *Id*. at E-13. And characteristics of groundwater flow and transport of radionuclides limit the amount and types of radionuclides that would travel offsite — at any site. *Id.* at E-9-14. The GEIS concludes that "it is unlikely that a leak . . . of sufficient magnitude and duration would go undetected long enough to result in offsite consequences." *Id.* at E-13.

NRC also considered comments concerning site-specific characteristics. *Id*. at D-68. The States describe one NRC response to a comment as a "bare acknowledgement" of adverse impacts at atypical plants. States Br. at 32. But NRC's response explained that the analysis of leaks addressed both typical and atypical locations — and pointed to the GEIS sections containing analyses of typical cases and unlikely scenarios. *Id*. at D-131. NRC also considered comments regarding Indian Point and other sites, and provided a

reasoned explanation for its disagreement with those comments. *Id*. at D-454-58. Petitioners' disagreement with GEIS conclusions provides no reason for the Court to second-guess NRC's expert judgment.

The States challenge NRC's evaluation because it is restricted to the "short-term" period of 60 years. States Br. at 37. But the assumption that fuel will be removed from spent fuel pools by the end of that period and placed in dry cask storage facilities is reasonable. First, it is consistent with NRC's rule requiring licensees to complete decommissioning within 60 years after ceasing operations. 10 C.F.R. § 50.82(a)(3). The Commission can extend this time "only when necessary to protect the public health and safety." *Id.* Second, the assumption is consistent with industry experience showing there are significant economic and operational factors that favor moving spent fuel out of storage pools, well within the 60-year timeframe (the longest time spent fuel has been left in a pool is 35 years, substantially less time than allowed by NRC regulations). NRC addressed these points in responses to comments. GEIS at D-135, D-474.

In *New York I*, the Court found NRC's previous analysis of leaks inadequately focused on past leaks and inappropriately relied on NRC's monitoring and regulatory compliance programs going forward. *New York I*, 681 F.3d at 481. In contrast, the GEIS not only describes NRC regulations relevant to monitoring for groundwater leaks and industry initiatives to which all operating

and decommissioning plants have committed (GEIS at E-6), it comprehensively evaluates the probability and offsite consequences of leaks.[9] NRC's bounding analysis is a careful study that, with a reasonable degree of certainty, addresses the risk of leaks at all sites. It therefore satisfies NEPA's "rule of reason."

4. NRC's Waiver Provision is Viable for Raising Concerns Unique to a Specific Facility

The States dismiss the availability of the waiver provision, suggesting it shifts the burden of NEPA compliance from NRC to interested parties. States Brief at 33. However, NRC met its NEPA burden in the GEIS. The agency concluded that its generic evaluations of potential fires and leaks are bounding for reasonably foreseeable conditions.

Moreover, "NEPA does not alter the procedures agencies may employ in conducting public hearings." *Union of Concerned Scientists v. NRC*, 920 F.2d 50, 56 (D.C. Cir. 1990). There is nothing improper with NRC applying its normal waiver procedures to a generically resolved NEPA issue. *Massachusetts v. NRC*, 708 F.3d 63, 74 (1st Cir. 2013) (NRC rejection of waiver petition relating to spent fuel impacts during license renewal term did not violate NEPA).

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[9] The GEIS also describes leaks that have occurred. GEIS at E-21-22. NRC provides a reasoned basis for using this experience as part of its assessment of the likelihood and consequences of future leaks. *Compare New York I*, 681 F.2d at 481.

Contrary to the States' claim, the Continued Storage Rule does not prejudge future waiver petitions. As Petitioners note, the GEIS (at D-35) indicates "the NRC is not aware of, and the comments have not raised, any information that would cause the NRC to conclude that any of the generic impact determinations would be invalid at any particular site." States Br. at 35. This simply reflects that NRC is not *now* aware of any site-specific characteristics that render its generic conclusions invalid. It does not establish that NRC would reject a waiver petition if presented with special circumstances for a particular facility. Rather, in issuing the rule, the Commission specifically said, "concerned parties who meet the waiver criteria in 10 CFR 2.335 will be able to raise site-specific issues related to continued storage at the time of a specific license application." 79 Fed. Reg. 56,242; *see also* GEIS at D-35-36.[10]

The States suggest that a waiver petition would fail under the applicable regulatory standard by claiming that the Continued Storage Rule's purpose "is to ensure that participants in licensing proceedings may not raise site-specific impacts." States Brief at 34. At most, this is an argument that NRC might misapply the waiver rule in the future — an argument "inappropriate here where

[10] Contrary to an implication in the States' argument, population issues are considered, even if not in connection with continued storage. Population is considered in site-specific licensing, including under the siting requirements (10 C.F.R. Part 100) and emergency planning requirements (10 C.F.R. Part 50, Appendix E).

the [Continued Storage Rule] is being challenged on its face." *Union of Concerned Scientists*, 920 F.2d at 56. Even so, the States presume a constrained reading of the waiver standard. The GEIS's purpose is to satisfy the NEPA obligation to evaluate the environmental impacts of continued storage and preserve efficiency by codifying those impacts. 79 Fed. Reg. at 56,244. There is no basis to presume that the Commission would defeat the purpose of the rule by applying the waiver standard to ignore special circumstances. *See Exelon Generation Co.* (Limerick Generating Station, Units 1 & 2), CLI-13-7, 78 NRC 199, 209-10 (2013) (refusing to find that it is "impossible" to waive generic NEPA regulations and rejecting the view that the purpose of such rules is to preclude participants in licensing proceedings from raising site-specific impacts).[11]

C. NRC's GEIS Reasonably Evaluates Storage Impacts

1. The Dry Storage Assumptions Are Reasonable

NRC assumes that in the "long-term" and "indefinite" timeframes dry casks will be replaced with new casks every 100 years. This assumption does not mean that dry casks *must* be replaced every 100 years for storage to remain safe.

[11] Stakeholders also may seek reevaluation of GEIS findings through other means. Under 10 C.F.R. § 2.802, anyone may petition the agency to initiate a rulemaking to alter a GEIS and related rule. *Massachusetts v. United States*, 522 F.3d 115, 121 (1st Cir. 2008). The public may also comment on any site-specific draft EIS incorporating GEIS determinations. *Id.*; *see also* 10 C.F.R. §§ 51.73, 51.74.

GEIS at 1-15-16. Rather, this timeframe represents a "reasonably conservative assumption" to support NRC's analysis. *Id.*; *see also id.* at B-15-20 (describing cask designs and operating experience supporting the longevity assumption). NRC explained that site-specific differences in replacement intervals are unlikely to result in impacts greater than those disclosed in the GEIS. *Id.* at D-133, D-152.

The States claim that NRC fails to provide "substantial evidence" supporting the assumption because no regulations require the replacement of dry casks every 100 years. States Br. at 38.[12] This ignores that the "rule of reason guides every aspect of the [NRC's] approach," including its adoption of assumptions. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 201 (D.C. Cir. 1991). NRC received comments suggesting the 100-year timeframe may be too short and others suggesting it may be too long. *Compare* GEIS at D-132, *with id.* at D-151. NRC considered the comments, evaluated cask designs and operating experience, and explained why maintaining the 100-year assumption was reasonable: it resulted in "neither worst case, nor underestimated" impacts. *Id.* at D-152. Accordingly, NRC properly exercised its "discretion to rely on the reasonable opinions of its own qualified experts." *Marsh*, 490 U.S. at 378.

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[12] Petitioners cite *Nat'l Audubon Soc'y v. Hoffman*, 132 F.3d 7, 17 (2d Cir. 1997) for this proposition. But that case addresses the standard for relying on mitigation to support a FONSI. Here, NRC has not issued a FONSI; it prepared the GEIS.

While no regulation specifically requires replacement every 100 years, NRC regulations only allow casks to continue to be used if they continue to ensure safe storage (for example, through aging management activities). GEIS at 2-29.[13] Given these requirements, NRC reasonably assumed a cask life within the expected range for such structures. *Webster v. U.S. Dep't of Agriculture*, 685 F.3d 411, 430-31 (4th Cir. 2012) (finding 100-year assumption for life of a dam reasonable because "that period is within the usual range for such projects, even if it is at the high end of the normal range"). By considering and disclosing the uncertainties associated with the 100-year assumption, NRC satisfied its NEPA obligations. *See Balt. Gas*, 462 U.S. at 98-99.

Petitioners argue that "NRC identifies no permanent funding source" to pay for costs associated with moving spent fuel to new casks. States Br. at 38. To the contrary, the GEIS explains that the Federal government bears the primary responsibility for storage costs associated with delays in establishing a repository. GEIS at D-501; *see also Ind. Mich. Power Co. v. United States*, 422 F.3d 1369, 1376-77 (Fed. Cir. 2005). It also includes a cost estimate for these activities. GEIS at 2-35. NEPA requires nothing more in terms of developing more complete plans for these activities. *Methow Valley*, 490 U.S. at 353.

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[13] NRC certifications for storage casks are also subject to renewal every 40 years based on a demonstration of continued safety. 10 C.F.R. § 72.240(a).

2. The Institutional Controls Assumption Is Reasonable

The Organizations claim that NRC violated NEPA's "rule of reason" by failing to evaluate the impacts of continued storage if there were a loss of institutional controls during the "long-term" and "indefinite" timeframes. Org. Br. at 26-31. However, the Organizations fail to establish that such impacts are anything other than "remote and speculative," and do not acknowledge that NRC specifically considered the scenario, explained its uncertainties, and described its consequences.

NRC found a loss of institutional controls "too remote" for meaningful analysis, and concluded that such an analysis would be "highly speculative, and ill-defined." GEIS at B-26, B-28. Simply put, "it would be illogical for any government at any level to abandon the storage facilities," which "are much less likely than buried geologic repositories to simply be forgotten." *Id.* at B-28. While NRC did not rely on the "remote and speculative" test, the GEIS provides a reasonable basis to conclude that such impacts are indeed "remote and speculative," and therefore need not be considered. *Limerick*, 869 F.2d at 739.

New York I does not require consideration of loss of institutional controls; it only addressed NRC's failure to consider the no-repository scenario absent a finding that such a scenario is remote and speculative. 681 F.3d at 479. The Court did not hold that NRC must consider a no-repository scenario coupled

with a *Mad Max* loss of institutional controls scenario. NEPA does not compel an evaluation of this sort of speculative scenario. *Morton*, 458 F.2d at 837 (agencies need not consider impacts "so remote from reality as to depend on, say, the repeal of the antitrust laws").

Petitioners also never identify a "proximate cause" linking the Continued Storage Rule or subsequent NRC licensing decisions to risks associated with a loss of institutional controls. *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767 (2004) ("NEPA requires 'a reasonably close causal relationship' between the environmental effect and the alleged cause," analogous "to the 'familiar doctrine of proximate cause from tort law.'") (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)). That risk would be the result of political and social factors far afield from NRC's actions. Any resulting impact could not arise without the complete abandonment of spent fuel; something that would not happen short of the government dissolving or an apocalyptic event. Such events lengthen the causal chain beyond the "reasonably close causal relationship" required under NEPA.

The Organizations suggest that the GEIS impermissibly relies upon "unknown future legislation." Org. Br. at 28. However, NRC simply assumed an institution — a government, corporation, or some other entity — would continue to manage spent fuel in accordance with *existing* legislation such as the Atomic

Energy Act and the Nuclear Waste Policy Act. To be sure, the GEIS discusses potential future legislation to inform decisionmakers of one way to avoid the indefinite storage scenario. But NRC did not rule out the possibility of no repository. GEIS at B-2. Nor did NRC cut off its environmental review based on its conclusion that a repository will most likely be available at the end of the "short-term" period.

The Organizations suggest that an evaluation of the "probability of failure to successfully site and build a repository" is needed. Org. Br. at 25. But, NRC assumed no repository (a failure probability of one) and assessed the reasonably foreseeable environmental impacts of indefinite storage. The GEIS, therefore, does *not* simply "hope for a repository" without evaluating the potential impacts of failing to establish one. Org. Br. at 25. Having assumed that a repository will not be developed, it would be illogical for NRC to quantify the probability of failure to site a repository as Petitioners suggest.

Despite the reasonable basis for not further discussing a loss of institutional controls, the GEIS discloses: (1) "accidents provide a helpful surrogate for analysis of a temporary lapse in institutional controls, including perspectives on the environmental implications of such a lapse;" and (2) "although too remote to calculate meaningfully, a permanent loss of institutional controls would likely have catastrophic consequences." GEIS at B-27. NRC did not mince

words when it assessed a loss of institutional controls. It found that "unmitigated physical deterioration of spent fuel casks and cladding over decades, if not centuries, would eventually expose radionuclides to the environment." *Id.* at B-31. NRC concluded that these "catastrophic" consequences would be similar to those detailed in the DOE Yucca Mountain EIS discussion of the "no action" alternative — *i.e.*, "the resulting consequences to the environment across nearly all resource areas would be clearly noticeable and destabilizing." *Id.*

It is not clear what further disclosure could be required. Petitioners have not demonstrated "that the NRC could evaluate risks more meaningfully than it has already done." *N.J. Dep't of Envtl. Prot. v. NRC*, 561 F.3d 132, 144 (3d Cir. 2009). As NRC stated, postulating a loss of institutional controls would require NRC to reach unsupportable conclusions about how and when our government institutions and social cohesiveness might collapse, and such speculation precludes meaningful calculations of impacts for the timeframes considered in the GEIS. GEIS at B-28. Further consideration of the scenario would only "distort[] the decisionmaking process by overemphasizing highly speculative harms." *Methow Valley*, 490 U.S. at 356 (citation omitted).

3. The Evaluation of Short-Term, High-Volume Leaks Is Reasonable

The States suggest that NRC unreasonably "assumed" that short-term, high-volume spent fuel pool leaks would be detected and mitigated before

significant offsite environmental impacts occurred. States Br. at 38. Citing *New York I*, Petitioners argue these leaks must be addressed because NRC has not found their "effective probability is zero." *Id.* at 39.

The States mischaracterize the GEIS and misapply *New York I*. The GEIS specifically considers both the probability and consequences of short-term, high-volume leaks. GEIS at E-9-21. Based on both, NRC concluded such leaks would not result in significant environmental impacts. The GEIS provides ample justification for this finding. NRC considered comments on this issue, concluding that "as the magnitude of the leak increases, the likelihood decreases that the leak will escape detection, either through spent fuel pool water level monitoring and surveillance, or onsite groundwater monitoring." *Id.* at D-473-74. Petitioners point to nothing in the record suggesting this conclusion is arbitrary and capricious.

4. The Evaluation of Cumulative Impacts Is Reasonable

The Organizations argue that NRC failed to consider the cumulative impacts of storing existing spent fuel along with additional spent fuel yet to be generated as a result of future NRC licensing decisions, because NRC segments "one project into multiple individual actions 'each of which has an insignificant environmental impact, but which collectively have a substantial impact.'" Org. Br. at 32 (quoting *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 514 (D.C. Cir. 2010)). Contrary to this theory, the federal action ultimately subject

to NEPA is a licensing action for one plant. NRC correctly addresses the cumulative impacts of continued storage based on a typical plant.

The GEIS evaluates the impacts of continued storage based on the total amount of spent fuel generated at a typical plant over its *entire* lifetime. GEIS at 2-8. From this baseline, the GEIS addresses the cumulative impacts of continued storage when added to the aggregate effects of *other* past, present, and reasonably foreseeable future actions. In doing so, it examines reasonably foreseeable future trends associated with new and continued nuclear plant and storage facility operations, as well as other NRC-regulated or spent fuel-related activities that could affect the same resources as those affected by continued storage. GEIS at 6-5-8. Petitioners do not dispute any resource-specific impact conclusion in the 50+ page evaluation of cumulative impacts in Chapter 6 of the GEIS. Nor do they identify any environmental impact determination that would be sensitive to additional, foreseeable quantities of spent fuel.

NRC need not consider cumulative impacts from different projects (different licensing actions) unless the "proposed actions are pending at the same time" in a particular region. *Theodore Roosevelt*, 616 F.3d at 514 (internal quotation marks omitted). NRC has not improperly segmented its NEPA review by focusing on project-specific impacts for individual licensing decisions. *Jackson County v. FERC*, 589 F.3d 1284, 1290-91 (D.C. Cir. 2009) (rejecting segmentation

claim involving "geographically distinct" projects, where "[e]ach project's relicensing application requires separate approval by FERC").

To the extent Petitioners suggest the GEIS should have addressed the impacts of disposal at a geologic repository, this ignores NRC's tiered approach to addressing impacts from licensing actions. *See* 40 C.F.R. § 1502.20 (encouraging agencies "to tier their [EISs] to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review"). The GEIS evaluates the environmental impacts of continued storage *pending* disposal. NRC considers environmental impacts of disposal through a different rule, 10 C.F.R. § 51.51, Table S-3. GEIS at 1-19, D-373.[14] Nothing in NEPA precludes NRC from addressing some issues in the GEIS and others in Table S-3.[15] All impacts — including both continued storage and disposal impacts — are considered before NRC acts on any proposed licensing action.

D. The GEIS Reasonably Addresses Alternatives

1. The GEIS Need Not Address Licensing Alternatives

The GEIS defines the proposed action as the adoption of a rule codifying the generic analysis of continued storage's environmental impacts.

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[14] Table S-3 was previously subject to judicial challenge and is not at issue here. *Balt. Gas*, 462 U.S. at 100 (upholding NRC's decision to generically address disposal issues).

[15] There also will be an EIS for an NRC-licensed DOE disposal facility.

GEIS at 1-5. Petitioners argue that NRC too narrowly defined the proposed action. Org. Br. at 18-23; States Br. at 45. According to Petitioners, "the proposed major federal action here, as in *New York I*, is licensing nuclear reactors that produce spent fuel." Org. Br. at 21. Petitioners say this required NRC to evaluate reasonable alternatives to licensing reactors, including the "no-action alternative" (*i.e.*, "denying reactor license applications and thereby avoiding generation of more spent fuel"). *Id.* at 22-23. But the Continued Storage Rule is not a licensing action. And Petitioners are looking at the GEIS with blinders on, ignoring the rest of the NEPA review for licensing decisions.

New York I did not hold that a generic analysis of continued storage constitutes an NRC licensing decision that must contain a complete evaluation of licensing alternatives. The Court found only that NRC's prior Waste Confidence Decision was a major federal action because it was used to enable the licensing of nuclear plants. *New York I*, 681 F.3d at 476-78. Rather than concluding that such an analysis is itself a licensing action, the Court found that when the NRC "makes generic findings that have a preclusive effect in all future licensing decisions — it is a pre-determined 'stage' of each licensing decision." *Id.* at 476.

The GEIS now represents one stage of NRC's NEPA review for a facility license. It need not — and is not intended to — address alternatives that are considered at the site-specific review stage. GEIS at D-117 ("The alternative

of not issuing or not renewing a nuclear power plant license is considered during the site-specific review of an individual license application."), D-120 ("Alternative methods of power generation . . . will be evaluated in site-specific nuclear power plant licensing reviews."). As NRC explained:

> [T]he impact determinations in the GEIS will inform the decisionmakers in licensing proceedings of the reasonably foreseeable environmental impacts of continued storage. These determinations will be weighed along with other impacts determined by the NRC on a site-specific basis for the facility or an activity. Thus, in the course of an individual licensing proceeding, the decision-maker will be able to compare all the environmental impacts of a proposed licensing action (*e.g.*, licensing a nuclear power reactor), including continued storage impacts, to the environmental impacts of reasonable alternatives, including the no-action alternative.

79 Fed. Reg. at 56,245.

NRC has opted to evaluate alternatives to licensing at the site-specific review stage — *i.e.*, the stage at which GEIS impact determinations are "plugged into" individual licensing decisions so they can be compared to the impacts of reasonable alternatives. *Cf. NRDC v. NRC*, 547 F.2d 633, 653 n.57 (D.C. Cir. 1976), *rev'd on other grounds sub nom. Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519 (1978), *vacated sub. nom. Balt. Gas & Elec. Co. v. NRDC*, 435 U.S. 964 (1978) (rejecting a contention that Table S-3 was itself a major federal action, because its "important decisional consequences" do not "ripen into a proposal for agency action until they are incorporated into individual licensing

decision"). Thus, the GEIS permissibly does not address alternatives to licensing reactors.

Petitioners claim that NRC defined the GEIS's goal "so unreasonably narrowly that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action." Org. Br. at 22 (quoting *Busey*, 938 F.2d at 195-96). But the definition of the proposed action and its goal does not narrow NRC's consideration of the no-action and energy generation alternatives. *See*, *e.g.*, *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 & 3), LBP-13-13, 78 NRC 246, 506-21 (2013) (evidentiary hearing held on site-specific contention challenging no-action and energy alternatives evaluations); *S.C. Elec. & Gas Co.* (Virgil C. Summer Nuclear Station, Units 2 & 3), CLI-12-9, 75 NRC 421, 469-71 (2012) (examining range of energy alternatives to new reactor project). NRC completes those evaluations at the site-specific review stage when more meaningful evaluations can take place. *Envtl. Law & Policy Ctr. v. NRC*, 470 F.3d 676, 684 (7th Cir. 2006) (upholding NRC decision not to address "need for power" analysis at early site permit stage).

As the Supreme Court has explained, "just as the Commission has discretion to evaluate generically aspects of the environmental impact of the fuel cycle, it has discretion to have other aspects of the issue decided in individual licensing decisions." *Balt. Gas*, 462 U.S. at 106 n.19. After all, "NEPA does not

require agencies to adopt any particular decisionmaking structure." *Id.* at 100. It only requires that NRC consider reasonable alternatives before making an irreversible and irretrievable commitment of resources. *Wyoming Outdoor Council v. U.S. Forest Serv.*, 165 F.3d 43, 49-50 (D.C. Cir. 1999). Because no irreversible and irretrievable commitment of resources associated with a future licensing action can take place before NRC completes its site-specific review, NRC may consider licensing-related alternatives at that stage of its review.

Petitioners also do not show that it would be practical (much less necessary) for NRC to consider alternatives such as the no-licensing alternative in the GEIS. The no-licensing alternative for a specific plant would likely lead to a unique need for alternative generation capacity, conservation, or combinations of these options. CI-1014: NUREG-1437, Rev. 1, Generic Environmental Impact Statement for License Renewal of Nuclear Plants at 2-18 (2013) (ML13106A241). These issues are better addressed at the site-specific stage. NRC therefore acted within its discretion in deciding to consider those issues in other NEPA reviews for individual licensing decisions.[16]

[16] Amicus Sierra Club (at 20) challenges as "outdated" the "baseload" generation goal often used by NRC in site-specific energy alternatives reviews. But no site-specific review is before the Court.

2. The GEIS Need Not Further Consider Mitigation Alternatives

Petitioners argue that NRC has not adequately considered mitigation alternatives to reduce the likelihood and consequences of spent fuel pool fires or leaks. Org. Br. at 23; States Br. at 40-45. But as with alternatives to licensing, the GEIS makes clear that mitigation alternatives are addressed primarily through the site-specific review process. GEIS at D-41 ("It is the licensing process, not this rulemaking, through which . . . mitigation of construction and operational impacts at a proposed facility are considered.").

NRC's approach does not narrow NRC's consideration of mitigation. *See, e.g., S. Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-09-7, 69 NRC 613, 727-28 (2009) (evidentiary hearing addressing mitigation measures for dredging impacts associated with new reactor project); *Va. Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), LBP-85-34, 22 NRC 481, 490-92 (1985) (reviewing dry cask storage as an alternative to license amendment authorizing shipment of spent fuel from one facility to another). Given that the GEIS does not authorize any activities impacting the environment, NEPA allows NRC to address mitigation measures during site-specific reviews. *Pub. Util. Comm'n of Cal. v. FERC*, 900 F.2d 269, 282-83 (D.C. Cir. 1990) (deferring decision on specific mitigation steps until start of construction "was both eminently reasonable and embraced in the procedures promulgated under NEPA").

Even assuming NRC was required to address mitigation at this stage, the GEIS reasonably addresses the mitigation alternatives cited by Petitioners in a manner that allows a fair evaluation of environmental impacts. *See N. Alaska Envl. Ctr. v. Kempthorne*, 457 F.3d 969, 979 (9th Cir. 2006) (NEPA allows agencies to discuss mitigation in "general terms" and rely on "general processes" when more specific measures can be considered at a later stage).[17]

First, the GEIS reasonably addresses potential changes to the density and arrangement of spent fuel in pools. States Br. at 40. After the 2011 Fukushima accident in Japan, NRC conducted research to evaluate potential measures to improve spent fuel storage. GEIS at D-316. NRC concluded that such measures "would only provide limited safety benefit and the costs would not be warranted." *Id.* NRC took its research, existing mitigation measures, and comments into consideration and found the risk of severe accidents in spent fuel pools to be small. *Id.* at 4-88. Given that NRC identified only a "small" risk of severe accidents in spent fuel pools, it was reasonable for NRC to decline to adopt

[17] The GEIS can be distinguished from *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380-81 (9th Cir. 1998). That case did not involve a situation (as does the GEIS) where mitigation measures would be considered in subsequent environmental analyses. Equally irrelevant are cases cited by Petitioners that involve reliance on mitigation to justify a FONSI. States Br. at 41-42 (citing *Nat'l Parks & Conservation Ass'n v. Babbit*, 241 F.3d 722 (9th Cir. 2001); *Audubon Soc'y of Cent. Ark. v. Dailey*, 977 F.2d 428 (8th Cir. 1992)).

mitigation measures. *Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667, 737 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

Second, the GEIS reasonably addresses whether limiting the use of high-burnup fuel reduces storage impacts. Org. Br. at 39. In response to comments, NRC determined that "the unique characteristics of high-burnup fuel are not a factor in environmental impact assessment for the resource areas considered." GEIS at I-9. Petitioners point to nothing contradicting this conclusion. Moreover, the GEIS assumed the use of high-burnup fuel and still found that accident risk is small. *Id.* at D-322, D-334, D-415. Given the small risk, nothing more is required.

Third, although not raised by Petitioners, Amicus Sierra Club (at 18) identifies "hardened on site storage" as "much better . . . than the groundless hope expressed in the [GEIS] that this waste can be stored in pools and dry casks essentially forever." Amicus offers no basis to suggest this alternative is reasonable to implement or necessary to minimize environmental impacts. Even so, the GEIS addressed this alternative and noted that NRC continues to examine whether it might effectively mitigate spent fuel storage risk. *See* GEIS at D-534 (questioning this alternative's costs, benefits, environmental impacts, and how it might be implemented). NEPA "imposes no requirement on NRC to hold off on

taking action where information is either unavailable or insufficient to change an existing environmental analysis." *Massachusetts*, 708 F.3d at 81.

Finally, the States argue for further evaluation of mitigation for spent fuel pool leaks. States Br. at 43. The States do not identify specific measures, suggesting only that NRC is "merely adverting to existing compliance measures" for monitoring that is not required. *Id*. However, this short changes the NRC's extensive evaluation of leaks and its bases for concluding that environmental impacts will be small. As discussed above, the GEIS relies on numerous technical factors to assess leak impacts, including similar site, groundwater flow, and radionuclide transport characteristics.[18] No basis exists on which to conclude that further analysis and disclosure regarding mitigation alternatives are required.

[18] The GEIS credits that all operating and decommissioning licensees go beyond what is required and have implemented extensive groundwater monitoring in accordance with industry's Groundwater Protection Initiative. *See* GEIS at E-5-7. It would be unreasonable for NRC to ignore this initiative.

VIII. CONCLUSION

The Petitions for Review should be denied. Petitioners conclude that the Continued Storage Rule should be vacated. States Br. at 47; Org. Br. at 33-34. Even if the Court were to find a flaw in the GEIS, a remand to an agency to resolve NEPA issues does not require enjoining or vacating an underlying action. *Busey*, 938 F.2d at 206; *Allied-Signal, Inc. v. NRC*, 988 F.2d 146, 150-51 (D.C. Cir. 1993); *Potomac Alliance v. NRC*, 682 F.2d 1030, 1031 (D.C. Cir. 1982). That is true here, as Petitioners primarily fly-speck the GEIS and vacatur would have disruptive consequences.

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Dated in Washington, D.C.
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CERTIFICATE OF COMPLIANCE

In accordance with Fed. R. App. P 32(a)(7)(C) and Circuit Rule 32-1, the undersigned counsel certifies that the foregoing Answering Brief of Intervenor-Respondent is proportionally spaced, has a type face of 14 points or more, and contains 8,718 words, excluding the title page, Table of Contents, Table of Authorities, Corporate Disclosure Statement, and certificates of counsel. The word count was determined by Microsoft Word.

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CERTIFICATE OF SERVICE

I certify that on this day, copies of "Initial Consolidated Answering Brief of Intervenor-Respondents Nuclear Energy Institute, Entergy Nuclear Operations, Inc., and Northern States Power Company" in the captioned proceeding have been served on the attached service list by Electronic Case Filing ("ECF"), or, for any party not registered for ECF, by U.S. Mail, first class, postage prepaid.

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