Supplemental Comments on Scope of Waste Confidence Environmental Impact Statement by Alliance for Nuclear Accountability, Beyond Nuclear, Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Citizens Allied for Safe Energy, Citizens Environmental Awareness of Southern Ontario, Don't Waste Michigan, Ecology Party of Florida, Friends of the Earth, Georgia Women's Action for New Directions, Hudson River Sloop Clearwater, Missouri Coalition for the Environment, NC WARN, Nevada Nuclear Waste Task Force, New England Coalition, Nuclear Information and Resource Service, Nuclear Watch South, Physicians for Social Responsibility, Public Citizen, Riverkeeper, San Luis Obispo Mothers for Peace, SEED Coalition, Sierra Club Nuclear Free Campaign, Southern Alliance for Clean Energy, and Natural Resources Defense Council

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I. INTRODUCTION

On October 25, 2012, the U.S. Nuclear Regulatory Commission ("NRC") published a "Notice of intent to prepare and (sic) environmental impact statement and notice of public meetings", 77 Fed. Reg. 65,137 (Oct. 25, 2012) ("Scoping Notice" or "Notice"). Comments were submitted on January 2, 2013, by the Alliance for Nuclear Accountability, Beyond Nuclear, Blue Ridge Environmental Defense League, Center for a Sustainable Coast, Citizens Allied for Safe Energy, Citizens Environmental Awareness of Southern Ontario, Don't Waste Michigan, Ecology Party of Florida, Friends of the Earth, Georgia Women's Action for New Directions, Hudson River Sloop Clearwater, Missouri Coalition for the Environment, NC WARN, Nevada Nuclear Waste Task Force, New England Coalition, Nuclear Information and Resource Service, Nuclear Watch South, Physicians for Social Responsibility, Public Citizen, Riverkeeper, San Luis Obispo Mothers for Peace, SEED Coalition, Sierra Club Nuclear Free Campaign, and Southern Alliance for Clean Energy ("the Organizations"). Comments by Alliance for Nuclear Accountability *et al.* on Scope of Waste Confidence Environmental Impact Statement ("Organization Comments"). Natural Resources Defense Council ("NRDC") also submitted comments on January 2, 2013. Letter from Geoffrey H. Fettus, NRDC, to Cindy Bladey, NRC, re: Natural Resources Defense Council Comments on the Proposed Waste Confidence Scoping Notice (Docket NRC-2012-246) ("NRDC Comments").

The Organizations and NRDC hereby submit supplemental comments ("the Supplemental Comments") in response to the principal comments filed by the nuclear industry's trade association, the Nuclear Energy Institute ("NEI"). NEI Comments on Scope of Generic Environmental Impact Statement to Support and Update Waste Confidence Decision and Rule (undated) ("NEI Comments"). NEI submitted its Comments under cover of a letter from Ellen C. Ginsberg, NEI, to Cindy K. Bladey, NRC, re: comments on Scope of Environmental Impact Statement Supporting the Rulemaking to Update the Waste Confidence Decision and Rule (undated) ("Ginsberg Letter").[1] These Supplemental Comments do not seek to add any new technical information beyond that which was already presented in the Comments filed on

[1] According to an SNL Energy news report, NEI filed its comments on January 3, 2013. *See* http://www.snl.com/InteractiveX/doc.aspx?ID=16715330. Therefore NEI failed to comply with the January 2 deadline for assured consideration of comments.

January 2, 2013. The Organizations and NRDC wish to respond, however, to arguments by NEI that the NRC should drastically limit the scope of the waste confidence EIS in order to expedite the review process and thereby ensure that it does not delay licensing of reactors. The Organizations seek to point out that NEI's arguments flout the requirements of the Atomic Energy Act ("AEA") and the National Environmental Policy Act ("NEPA"), which forbid the NRC from elevating the economic interests of the nuclear industry over NRC's responsibility to protect public health and safety and the environment. NEI's Comments also flout the mandate from the DC Circuit Court of Appeals that the NRC meaningfully consider the impacts associated with failure to establish a permanent repository, spent fuel pool ("SFP") leaks, and SFP fires.

The Organizations and NRDC also seek to respond to NEI's arguments that the NRC already has sufficient information to evaluate the environmental impacts of spent fuel storage, including pool fires, pool leakage, and impacts of fuel storage over an extended period. As discussed below, these claims are contradicted by the NRC's own technical documents and by the expert declarations supporting the Organizations' Comments.

Therefore, while these Supplemental Comments are being filed beyond the Scoping Notice's January 2 deadline for assured consideration of comments, the Organizations and NRDC respectfully submit that their consideration would be helpful to the NRC in determining the legally and technically required scope of the EIS. In addition, the Supplemental Comments are being submitted within a reasonable two-week time after NEI submitted its own Comments (which were also filed after the January 2 deadline).

II. DISCUSSION

A. NEI's Position is Inconsistent with the AEA and NEPA

NEI argues that maintaining the schedule for completing the EIS in the fall of 2014 is an "essential objective" because "the Commission will not make final licensing decisions on pending license applications dependent upon the WCD until the remanded issues are resolved." Ginsberg Letter at 1. In effect, NEI is arguing that license applicants' economic interests in obtaining permits as quickly as possible should be the NRC's driving consideration in determining the scope of the EIS; and the EIS should not take so long to prepare that it cannot be finished by the fall of 2014.

But this argument flies in the face of both the AEA and NEPA. Under the AEA, the NRC must put safety first, and may not be influenced by cost considerations in its decisions. *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 117 (D.C. Cir. 1987). And NEPA requires the NRC to take a "hard look" at environmental impacts, showing that it has taken into consideration "every significant aspect of the environmental impact of a proposed action." *Baltimore Gas & Electric v. NRDC*, 462 U.S. 87, 97 (1983) (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976); *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978)). The Waste Confidence Decision is a determination about the safety and environmental impacts of storing long-lived radioactive materials that can seriously contaminate the environment and harm public health if released, and that contain plutonium that poses a serious national security threat.

In reviewing issues surrounding the storage (and disposal) of these materials, the NRC simply may not cut corners in order to meet an arbitrary schedule desired by the nuclear industry. The safety and environmental evaluations in the waste confidence EIS must be adequately supported to satisfy both the AEA's "no undue risk" standard and NEPA's "hard look" standard. As discussed in the Organizations' Comments and supporting declarations, this effort is likely to take upwards of seven years. *See* Comments at 6.

B. NEI's Comments Are Contradicted by NRC's Own Documents and the Factual Record.

NEI argues that it is feasible for the NRC to meet a fall 2014 deadline for completion of the waste confidence EIS because it already has all the information it needs. But NEI's arguments are directly contradicted by NRC's own documents, which show that far more information is needed than is currently available in order to support the Waste Confidence Decision. The expert declarations submitted by the Organizations with their Comments also identify significant gaps in the data and analyses needed to support a credible Waste Confidence Decision.

1. The NEI ignores the NRC Staff's Estimate for How Much Time it will Take to Evaluate the Environmental Impacts of Long-Term Spent Fuel Storage.

As discussed at length in the Organizations' and NRDC's Comments, the NRC Staff itself has stated that it will take at least seven years to evaluate the environmental impacts of long-term spent fuel storage. Organization Comments at 6-8; NRDC Comments at 15-16. As further discussed in Sections 4 and 5 of Dr. Makhijani's Declaration, the NRC has years of research to do in order to gather sufficient data regarding spent fuel degradation and transportation and handling risks, as well as the characteristics of high-burnup fuel that will affect disposal impacts. In addition, post-Fukushima seismic geologic data, which will take years to gather and analyze, should be awaited because it bears on the safety and environmental impacts of long-term spent fuel disposal. Organization Comments at 8.

2. The DOE's Yucca Mountain EIS does not provide a "bounding analysis" for the waste confidence EIS

NEI argues that the NRC can use the discussion of the no-action alternative in the U.S. Department of Energy's ("DOE's") Yucca Mountain EIS for its evaluation of environmental impacts of indefinite spent fuel storage in the event that no repository is sited. NEI Comments at 5. Moreover, according to NEI, "[o]nce the NRC addresses the scenario of no repository, it will have bounded the other scenarios and will have adequately supplemented the prior WCD findings." *Id.* That assertion is simply incorrect, for several reasons.

a. The Yucca Mountain EIS's discussion of the no action alternative admittedly underestimates the impacts and is incomplete.

The Yucca Mountain EIS is, by its own terms, inadequate to substitute for a new environmental analysis here. As discussed in Section 8 of Dr. Makhijani's Declaration, the Yucca Mountain EIS deliberately understated the environmental impacts of the no-action alternative in order to avoid casting it in too negative a light. Makhijani Declaration, ¶ 8.9 (citing Yucca Mountain EIS, Vol. I at 7-9 and 7-10). *See also* Yucca Mountain EIS, Vol. II at K-2. For the same purpose, the DOE completely avoided quantification or analysis of some impacts. For instance, the Yucca Mountain EIS fails to quantity some of the most important impacts of deterioration of casks after institutional control is lost, though it noted that major waterways and rivers that supply drinking water to tens of millions of people could become contaminated as a result of cask deterioration. Makhijani Declaration, ¶ 8.14 (citing Yucca Mountain EIS, Vol.II at K-29). And as DOE admits in the Yucca Mountain EIS, an uncertainty regarding long-term cladding degradation alone could increase radiation dose and cancer fatality estimates by several orders of magnitude. *Id.,* ¶ 8.16 (citing Yucca Mountain EIS, Vol. II at K-38).

In addition, the Yucca Mountain EIS does not take into account the impacts of storing high burnup fuel, for which degradation phenomena are "far more severe" than earlier fuel types. *Id.,* ¶ 8.17. Nor does the Yucca Mountain EIS's discussion of the no action alternative take the potentially significant effects of climate change into account. *Id.,* ¶ 8.18.

In sum, the NEI's statement that the "no action alternative" in DOE's Yucca Mountain EIS "thoroughly bounded the environmental impacts of this extremely unlikely scenario," is factually and technically incorrect. NEI Comments at 7. The Yucca Mountain EIS no action alternative is purposely and admittedly not bounding; by DOE's own admission, several impacts are not calculated and variation of critical parameters, notably cladding degradation rates, increase cancer fatality estimates by "several orders of magnitude," *i.e.,* a thousand times or even much more. Makhijani Declaration, ¶ 8.16. (The term "several" orders of magnitude is not defined but the term "several" can reasonably be taken to mean three or more orders of magnitude – that is, a factor of 1,000 or more). Therefore, contrary to the NEI's claim, the Yucca Mountain EIS's discussion of the no action alternative *cannot* serve as a bounding analysis for the scenario in which there is no repository.

b. Contrary to NEI's recommendation, the NRC cannot rely on the PSFS consolidated storage EIS.

NEI recommends that in case of consolidated storage, the NRC should rely on the Private Spent Fuel Storage EIS, NUREG-1714.[2] NEI Comments at 6. However, NUREG-1714 only considered storage for 40 years, a much shorter period than required by the Court's remand in *State of New York.* Further, NUREG-1714 assumes repository disposal and relies on the very Waste Confidence Decision that NRC revised and that, in its revised form, has been remanded:

> The proposed PFSF would be licensed by the NRC to operate for up to 20 years. The lease between the Skull Valley Band and PFS would have an initial term of 25 years with an option for an additional 25 years (for a total of 50 years). The applicant has indicated that it may seek to renew the NRC license for an additional 20 years (for a total of 40 years) . . . .
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> By the end of the licensed life of the proposed PFSF and prior to the expiration of the lease, it is expected that the SNF would have been shipped to a permanent repository. This is consistent with the NRC's Waste Confidence Decision (55 Fed. Reg. 38474; Sept. 18, 1990), which states that at least one mined geological repository will be available by the end of 2025.[3]

Thus, the Private Fuel Storage EIS does not provide the NRC with a means to avoid estimating the impacts of long-term storage of high burn-up fuel either onsite or at a consolidated storage location by appeal to NUREG-1714. As discussed in Dr. Makhijani's Declaration, this estimate must address the impacts of long-term storage of high-burnup fuel, about which the NRC has little or no existing information. *Id.*, ¶ 3.6, ¶ 3.7, ¶ 5.1, and Section 4.

c. The NRC cannot avoid estimating the impacts of repository disposal for all scenarios in which such disposal is assumed.

NEI suggests that a repository "would mitigate" impacts of onsite storage and that "the EIS need only describe the availability of a permanent repository as a potential mitigating measure" rather than actually estimating the impacts of such disposal. NEI suggests this because "under NEPA, the NRC need not be in a position to compel specific mitigation actions, outcomes, or alternatives." NEI Comments at 6. We disagree.

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[2] NUREG-1714, Final Environmental Impact Statement for Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of the Goshute Indians and the Related Transportation Facility in Tooele County, Utah (2001). On the web at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1714/v1/exec-summ.pdf

[3] NUREG-1714, Executive Summary at xxxii.

A repository is not merely a "mitigation alternative" to a basic strategy of storage. On the contrary, a repository is the desired solution for minimizing the environmental impacts of spent fuel that has been generated by the operation of nuclear reactors. It has been central to the waste confidence findings from the very start. In the Scoping Notice, repository disposal is assumed for all but one of the NRC's scenarios proposed for consideration in the EIS. Under NEPA, therefore, the environmental impacts of repository disposal may not be ignored in this EIS. The NRC is required to calculate the impacts of disposal in all scenarios where such disposal is assumed. *See also* ¶ 7.1 of Dr. Makhijani's Declaration, which demonstrates that an environmental analysis for any storage scenarios that are followed by repository disposal logically must include an analysis of the impacts of the repository, in order to ensure that the environmental impacts of each scenario are fully considered.

The only analysis of repository impacts that the NRC has is Table S-3, whose finding of no significant impact is based on the assumption that spent fuel will be reprocessed and the resulting high-level waste will be disposed of in bedded salt. As discussed in Dr. Makhijani's Declaration, ¶¶ 7.3 and 7.4, that assumption does not address disposal of spent fuel; further the assumption that spent fuel could be disposed of in salt has been explicitly repudiated by the NRC, and therefore the finding of no significant impact is no longer valid. Further, Yucca Mountain disposal impacts also cannot be used since Yucca Mountain is highly unlikely to be available as a permanent repository and since the project has been defunded by the government. *Id.*, ¶ 7.2.

3. The NRC's current data and analyses of spent fuel pool fire risks are completely inadequate to satisfy NEPA.

NEI claims that the NRC "has previously compiled numerous technical studies regarding the risks and environmental impacts of onsite spent fuel storage that it can rely on in assessing both the probabilities and consequences of spent fuel pool fires." NEI Comments at 10. As Dr. Thompson points out, however, the NRC has not published any study regarding spent fuel pool hazards for over ten years, and none of its prior studies meet the standards for an EIS. Thompson Declaration, ¶¶ VIII-3 and VIII-4. While the NRC claims to have performed some studies since then, they are classified or otherwise withheld from public disclosure. *Id.*, ¶ VIII-5. And the NRC has even lost track of its classified studies. A recent Government Accountability Office report stated, for example, that:

> Because a decision on a permanent means of disposing of spent fuel may not be made for years, NRC officials and others may need to make interim decisions, which could be informed by past studies on stored spent fuel. *In response to GAO requests, however, NRC could not easily identify, locate, or access studies it had conducted or commissioned because it does not have an agencywide mechanism to ensure that it can identify and locate such classified studies.*

Id., ¶ VIII-5 (citing GAO-12-797, *Spent Nuclear Fuel: Accumulating Quantities at Commercial Reactors Present Storage and Other Challenges* (August 2012) (emphasis added)). Thus, even if the NRC has done significant analyses of spent fuel pool fire risks, it has neither kept good track of them nor published any reports with the level of information and accountability required by NEPA. Under the circumstances, the NRC has significantly more work to do before it can claim

to satisfy NEPA's requirement of providing enough information to "give the public the assurance that the agency 'has indeed considered environmental concerns in its decision-making process.'" *Robertson*, 490 U.S. at 349 (quoting *Baltimore Gas & Electric Co. v. NRDC*, 462 U.S. 87, 97 (1983)). Moreover, the NRC's secrecy regarding spent fuel pool fire risks is both unnecessary and counter-productive. Thompson Declaration, ¶ VIII-7.

4. The NRC must do additional studies regarding spent fuel pool leakage risks.

NEI argues that the NRC already has collected a significant amount of data on the effects of spent fuel pool leaks, and concluded that such leaks will not result in significant environmental impacts. According to NEI, the NRC staff should use the existing information to the extent possible and bolster it with new analyses only as necessary. Moreover, the staff need not utilize "worst case" assumptions in this analysis.

NEI's arguments, however, flout the mandate of the D.C. Circuit Court of Appeals. As the Court explained, the agency's existing studies are inadequate *because* they rely on studies of *past* leaks. As the Court observed, "the harm from past leaks – without more – tells us very little about the potential for future leaks or the harm such leaks might portend." 681 F.3d at 481. The Court also found inadequate the NRC's assertions regarding "untested" prospective regulatory improvements to spent fuel pools, and existing monitoring and compliance programs that are "in no way sufficient to support a scientific finding that spent-fuel pools will not cause a significant environment (sic) impact during the extended storage period." *Id.* Because of these shortcomings, the Court ordered the NRC to undertake a new, forward-looking analysis. *Id.*

In order to comply with the Court's order, as outlined in Mr. Musegaas's Declaration, the NRC's environmental analysis should, among other things: assess the impact of new seismological information on the probability of SFP leaks and on the environmental impacts that may occur as a result; assess potential long-term impacts of SFP leaks on adjacent aquatic ecosystems, independent of NRC's regulatory framework related to dose consequences; and assess cumulative impacts of SFP leaks in addition to other rampant radiological leaks from other components. Musegaas Declaration at 9-17. In addition, the EIS should examine an array of mitigation measures, including immediate clean-up, mandatory comprehensive groundwater monitoring, measures to prevent initiation or exacerbation of future leaks, preventative measures to proactively prevent future leaks from non-spent-fuel-pool components, and measures to mitigate impacts to aquatic ecologies in adjacent affected waterways. *Id.* at 18-19.

NEI's Comments also inappropriately presuppose that the probability and consequences of future SFP leaks pose "low risks." NEI Comments at 9. This cuts off the analysis at the knees. NRC must undertake its EIS without such an assumption, and without narrowing the focus to existing conclusions about the probability and risks of SFP leaks.

Respectfully submitted,

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