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By Electronic Mail

Comments on the May 2018 Supplement Analysis for the Site-Wide Environmental Impact Statement for the Y-12 National Security Complex (DOE/EIS-0387-SA-02)

On behalf of the Oak Ridge Environmental Peace Alliance (“OREPA”) and Nuclear Watch New Mexico, we are submitting these comments on the National Nuclear Security Administration’s (“NNSA”) May 2018 Supplement Analysis for the Site-Wide Environmental Impact Statement for the Y-12 National Security Complex (“2018 SA”).¹

Although we are taking this opportunity to comment on the 2018 SA, we must stress at the outset that the 2018 SA is not a lawful substitute for the new or supplemental Environmental Impact Statement (“EIS”) that OREPA and Nuclear Watch first requested roughly 18 months ago on October 27, 2016, and which OREPA, Nuclear Watch, and the Natural Resources Defense Council (“NRDC”) have demanded in an ongoing lawsuit. *See OREPA et al. v. Perry et al.*, No. 3:18-cv-00150-PLR-DCP (E.D. Tenn.). Instead, the 2018 is a transparent attempt to paper over NNSA’s prior analytical defects and consequent violations of the National Environmental Policy Act (“NEPA”) identified in *OREPA v. Perry*. However, not only does the 2018 SA wholly fail to correct NNSA’s prior NEPA violations, but it also identifies various

¹ The National Nuclear Security Administration (NNSA) is the semi-autonomous nuclear weapons agency within the Department of Energy.



additional ways in which NNSA continues to violate NEPA. In short, the 2018 SA is itself deficient and in no way remedies NNSA's violations of NEPA.²

As described in *OREPA v. Perry*, NNSA has since 2011 been engaged in a systematic effort to modernize the Y-12 National Security Complex near Oak Ridge, Tennessee. This effort has been fraught with logistical, financial, and analytical problems that have resulted in a series of design changes and profound, ongoing uncertainty at NNSA and the Department of Energy ("DOE") with regard to how the agency intends to pursue modernization of the Complex. However, although NNSA has substantially altered its proposed modernization actions, and has repeatedly stated that it continues to evaluate alternatives for various aspects of this modernization effort, the agency has consistently refused to prepare any new or revised NEPA analysis to take a hard look at the agency's altered and new actions, to consider reasonable alternatives, or to involve the public in the agency's decision-making. As a result, NNSA's actions have flouted and continue to flout the legal requirements of NEPA.

Factual Background

A thorough description of the Y-12 National Security Complex and NNSA's efforts to modernize the Complex appears in the Complaint in *OREPA v. Perry*, No. 3:18-cv-00150, ECF No.1. For the sake of brevity, that factual background is incorporated here by reference, and these comments include only a brief summary of highly relevant facts.

The Y-12 Complex was largely built during the Manhattan Project and the Cold War. Many of the buildings at Y-12 are over 60 years old, and these aging buildings are in advanced states of disrepair. However, although NNSA acknowledges that these buildings are outdated, obsolete, oversized, inefficient, and require inordinate and ever-increasing amounts of maintenance merely to remain operational, most of NNSA's mission-critical activities continue to take place in these aging buildings. NNSA has recognized that its ongoing reliance on these aging buildings is extremely costly, places workers, the public, and the environment at risk, and poses a severe risk to the agency's ability to conduct its mission. Additionally, the fact that these aging facilities are widely spread out across a highly contaminated campus and located within a highly secure perimeter constitutes a significant obstacle to any environmental remediation measures. Indeed, the entire Y-12 Complex has been listed as part of a Superfund site for well over 30 years but never successfully cleaned up.

Recognizing these numerous, challenging problems, NNSA embarked on a modernization effort for the Y-12 Complex in 2011. At that time, NNSA prepared a Site-Wide Environmental Impact Statement ("the 2011 SWEIS") that considered whether the agency should build a single new Uranium Production Facility ("UPF") or whether the agency should instead attempt to upgrade the existing, aging buildings at Y-12 and continue to rely on these antiquated facilities. NNSA concluded in a 2011 Record of Decisions ("ROD") that constructing

² Nor is NNSA's willingness to accept public comment on this draft SA in any way a substitute for the far more meaningful public involvement that is required in the EIS process. For example, because the SA process does not include a consideration of alternatives, the public has no opportunity to propose or comment on reasonable alternatives. Nor can this limited comment period make up for the fact that NNSA has not taken any public input on its fundamental re-design of its Y-12 modernization activities for the last 7 years.

a single new UPF was the prudent course of action, because it would allow NNSA to consolidate its Enriched Uranium activities in a modern facility that was designed to comply with modern building and safety standards. NNSA specifically rejected the alternative of upgrading existing buildings because that alternative would be less safe, less secure, and less efficient. NNSA also noted that consolidating its Enriched Uranium activities in a single UPF would allow NNSA to abandon the existing, decrepit, contaminated buildings at Y-12 and reduce the highly secure perimeter by 90%, thus enabling a far more efficient clean-up of the highly contaminated Complex. NNSA initially estimated that the UPF project would cost roughly between \$600 million and \$1.5 billion.

However, NNSA's plan to construct a single "big box" UPF soon encountered financial and logistical problems. For example, in 2012, NNSA discovered that the "big box" UPF was not actually big enough to house all the necessary equipment. This egregious design flaw increased the cost of the UPF project by \$500 million—roughly one-third of the initially estimated cost of the entire UPF project. This was only the beginning of the cost overruns. Further design refinements and associated delays increased the costs by at least another \$3 billion. Additionally, the Government Accountability Office ("GAO") reports that NNSA's initial \$1 billion cost estimate was erroneously based on the cost of building a Uranium *storage* facility, which is completely different and much simpler and cheaper than a Uranium *processing* facility. Accordingly, by the end of 2012, the cost estimate rose to \$6.5 billion. Ultimately, independent government auditors estimated that the "big box" UPF project would cost between \$11 billion and \$19 billion.

The dramatically increased cost of the "big box" UPF led NNSA to reconsider its approach to Y-12 modernization. Under significant Congressional pressure to complete the UPF project for no more than \$6.5 billion, the agency made a decision in 2014 to stop implementation of the "big box" UPF and went back to the drawing board. NNSA convened a so-called "Red Team" to evaluate design alternatives. NNSA did not solicit nominations for the Red Team from the public, nor did the Red Team hold any public hearings or information sessions. The Red Team's consideration of design alternatives also did not involve any NEPA analysis, despite the fact that (as discussed below) NEPA's fundamental purpose is to enable federal agencies to make informed decisions about alternatives. Indeed, the Red Team process was so thoroughly opaque to the public that OREPA and Nuclear Watch were forced to file a Freedom of Information Act request merely to obtain any documentation of the Red Team's process and recommendations.

In the absence of any public involvement or NEPA process, NNSA adopted the Red Team's recommendation to split up the "big box" UPF. As a result, NNSA decided to abandon the "big box" UPF, to instead build 5 new buildings to house many of the operations that were previously to be placed in the "big box," and to use two aging, vulnerable buildings at Y-12, Building 9204-2E and the 9215 Complex, for new and ongoing mission-critical operations.

Around the same time that the Red Team was re-considering the design of the too-costly "big box" UPF, in 2014 the United States Geological Survey ("USGS") issued a set of seismic hazard maps that indicated that the geographic area of the Y-12 Complex faces a greater risk of experiencing a larger earthquake than the agency previously estimated in 2008. The USGS also made the data underlying this hazard map publicly available, as that agency routinely does.

Since 2014, the USGS has also issued three updated seismic hazard maps, as well as underlying data, in 2016, 2017, and 2018, which show an even greater risk for the area of Y-12 than the USGS had estimated in 2014.

In 2014 and 2015, the Defense Nuclear Facilities Safety Board (“DNFSB”) performed structural evaluations of Buildings 9204-2E and the 9215 Complex—the same buildings that NNSA was at that time deciding to continue to use instead of building the “big box” UPF. The DNFSB is a federal agency that Congress created specifically to “review and evaluate standards relating to the design, construction, operation, and decommissioning of defense nuclear facilities” and to recommend measures “necessary to ensure adequate protection of public health and safety.” *Energy Research Found. v. Def. Nuclear Facilities Safety Bd.*, 917 F.2d 581, 582 (D.C. Cir. 1990). The DNFSB found that Building 9204-2E and the 9215 Complex have known structural performance deficiencies and do not meet modern structural design requirements. The DNFSB warned NNSA that these deficiencies entail the risk of structural collapse and release of radiological contaminants in the event of an earthquake. DNFSB specifically noted that these risks may have been acceptable when NNSA was proposing to vacate these buildings and move their contents to the “big box” UPF, but that NNSA’s decision to abandon the “big box” design and continue to use these buildings meant that a far more detailed evaluation of these risks was necessary. DNFSB specifically delineated certain structural problems with each building and recommended highly specific analyses that NNSA should employ in order to meaningfully evaluate the risk of continuing to rely on these aging buildings.

Additionally, in 2015, the Department of Energy’s Inspector General (“IG”) issued a report regarding excess high-risk facilities within the Department. The IG noted that these facilities, no longer used by NNSA for ongoing operations, “continue to deteriorate and pose increasing risks to mission, workers, the public and the environment,” and that “[d]elays in the cleanup and disposition of contaminated excess facilities expose the Department, its employees and the public to ever-increasing levels of risk.”

In 2016—two years *after* NNSA decided to abandon the “big box” UPF design the agency had selected in 2011—the agency prepared a “supplement assessment” ostensibly to analyze whether any project design changes or other new information warranted a new or supplemental EIS. The 2016 SA and its accompanying Amended Record of Decision (“2016 AROD”) revealed that, in order to save money in comparison to the “big box” UPF, NNSA intended to construct several new buildings while also continuing to use Building 9204-2E and the 9215 Complex. The 2016 decision to segment the re-designed UPF project for limited, post hoc analysis in an SA was made purely for NNSA’s convenience—to allow it to proceed with construction without ever fully analyzing the site-wide consequences of this and other decisions about the modernization of the Y-12 Complex.

The 2016 SA confirmed that NNSA intended to upgrade the aging, vulnerable Building 9204-2E and the 9215 Complex but significantly reduced the scope of the upgrades from what the agency had contemplated in 2011. Thus, while the 2011 SWEIS included an alternative of upgrading existing facilities to modern safety and environmental standards “to the extent possible within the limitations of the existing structures and without prolonged interruptions of

manufacturing operations,” the 2016 SA stated that “it would be prohibitively expensive” to bring these buildings to current standards and that the agency would not do so.

Thus, the agency’s 2016 decision was significantly different from what the agency contemplated in 2011; NNSA abandoned the effort to bring the aging, vulnerable buildings up to modern standards as much as structurally possible and instead stated that cost, rather than safety or practicability, was the determining factor for what structural renovations would be implemented. The difference is important. For example, while NNSA recognized in 2016 that Building 9204-2E and the 9215 Complex have “ceiling, wall, and exterior façade degradation,” the SA did not state that the agency would actually repair these problems, but instead stated that it would use only “administrative controls” such as reducing the quantity of “at risk” material, restricting worker access to certain areas, or requiring workers to wear hardhats.

NNSA’s 2016 SA also failed to consider a great deal of important information relevant to the risks of the continued use of these buildings. The 2016 SA did not consider the USGS’s updated seismic hazard studies with regard to the ongoing use of aging buildings; instead, the 2016 SA merely discussed the relevance of these maps for *new* buildings, despite the fact that the DNFSB had made clear to NNSA the seismic risks associated with the continued use of buildings that are not up to modern building standards, and DNFSB had explicitly recommended various technical analyses that NNSA should use before making any decision to continue to use these buildings. NNSA’s 2016 SA did not follow through on any of the DNFSB’s recommendations, failing for example to perform the non-linear modeling techniques that the DNFSB had recommended. In fact, the 2016 SA did not discuss the DNFSB’s report at all, or even include the DNFSB’s recommendation in the SA’s list of references—despite the fact that the 2011 SWEIS had stated that NNSA would consider the DNFSB’s input and work with DNFSB to ensure the agency adequately considered seismic issues.

The 2016 SA also did not consider the Department of Energy IG’s report, which had revealed that the delays associated with the cleanup and disposition of excess contaminated old facilities were causing “ever-increasing levels of risk” to workers and the public. The 2016 SA did not discuss this report or include it in its list of references. Similarly, the 2016 SA did not analyze how NNSA’s decision to continue to use existing buildings would impair cleanups at Y-12 by requiring a larger highly secure area. Although the 2016 SA did note that the 2011 decision would have reduced the highly secure area by 90 percent, and that this would not occur under the re-designed UPF plan, the 2016 SA did not analyze how retaining a larger highly secure area would impair the necessary cleanups of contaminated facilities and areas, nor evaluate whether this alteration would have additional environmental impacts.

Despite failing to consider a great deal of information that arose between the agency’s original 2011 decision and its announcement of the re-designed UPF project in 2016, the 2016 SA stated that there were no new circumstances or new information warranting the preparation of a new or supplemental EIS.

In October 2016, OREPA and Nuclear Watch sent NNSA a detailed petition describing how the agency had made a significant change to its 2011 decision to build a single new UPF, and had done so without analysis of critical new information including the 2014 USGS seismic

hazard maps and reports from the DNFSB and the Department of Energy IG's report. The petition specifically called on NNSA to analyze this new information in a new or supplemental EIS and to analyze how the retention of aging buildings would impair the agency's efforts to decontaminate, decommission, and clean up facilities the agency would no longer use.

On December 22, 2016, the NNSA issued a one-paragraph denial of the petition from OREPA and Nuclear Watch. NNSA's denial did not discuss any of the new information the petition had raised or discuss how the retention of a larger highly secure area would impair the agency's cleanup efforts.

In March 2017, the DNFSB issued another report on NNSA's "Extended Life Program Safety Strategy," which confirmed that NNSA's plans to continue to use Buildings 9204-2E and the 9215 Complex entails significant safety risks for these building's structures, as well as nuclear criticality safety and confinement. This 2017 DNFSB report on the Extended Life Program ("ELP") confirmed that certain mission-critical processes will remain in these aging, vulnerable buildings for at least 25 years and that these facilities cannot withstand a large earthquake. The DNFSB continued to recommend that NNSA apply a modern analysis of seismic risks and conduct updated modeling to determine how to upgrade these aging buildings. The 2017 DNFSB report also confirmed that if an earthquake causes structural collapse of Building 9204-2E or the 9215 Complex, the processes in those buildings could suffer an uncontained nuclear criticality accident, which the DNFSB has previously indicated could have "significant radiological consequences" including "serious public consequences."³ However, the report also showed that NNSA does not intend to *begin* analysis of such accidents until 2020.

A separate DNFSB report in 2017 also recommended specific measures that NNSA should take to promote safety, including better fire suppression systems and containment systems for nuclear processes.⁴

In July 2017, OREPA, Nuclear Watch, and NRDC filed suit against the NNSA because the agency's refusal to prepare a new or supplemental EIS in light of the changes in UPF design and the new information the agency had received was unlawful and arbitrary and capricious. The lawsuit also challenged NNSA's failure in the 2016 SA to consider the new information described above, as well as the NNSA's summary denial of OREPA and Nuclear Watch's petition without analysis of any of the new information or issues described in that petition.

After counsel for plaintiffs in *OREPA v. Perry* notified counsel for Defendants of the plaintiffs' intention to prepare an amended complaint alleging that NNSA had also violated NEPA by implementing a new Extended Life Program after 2014 for the ongoing use of Buildings 9204-2E and the 9215 Complex without any NEPA analysis, Defendants indicated to plaintiffs their intent to prepare another Supplement Analysis: the 2018 SA.

³ DNFSB, *Confinement of Radioactive Materials at Defense Nuclear Facilities*, October 2004, at iii (attached here as Attachment D).

⁴ Letter from Sean Sullivan, Defense Nuclear Facilities Safety Board Chairman, to Frank Klotz, Administrator of NNSA, June 26, 2017.

In May 2018, NNSA issued the draft 2018 SA and invited public comment. The 2018 SA evidently constitutes an attempt to correct the deficiencies that OREPA, Nuclear Watch, and NRDC identified in the 2016 SA. Indeed, NNSA's issuance of the 2018 SA is a tacit admission of the patent inadequacy of the 2016 SA. For example, the 2018 SA's thin attempt to discuss the DNFSB's input and the 2014 USGS seismic hazard maps highlights the fact that the 2016 SA completely failed to consider this highly probative information in violation of NEPA.

However, the 2018 SA does not rectify the violations previously pinpointed by OREPA, Nuclear Watch, and NRDC. To the contrary, the new SA is arbitrary and capricious in its own right. In addition to failing to offer any meaningful analysis of the information that the 2016 SA simply disregarded, the 2018 SA also identifies a whole host of actions that have never been subjected to any NEPA analysis, revealing how the NNSA has violated and continues to violate NEPA by failing to take a hard look at changed circumstances and new information relating to its efforts to modernize the Y-12 Complex.⁵

In the meantime, NNSA is also compounding its NEPA violations by implementing the actions that it has failed to analyze. Thus, after it issued its 2016 SA and Amended Record of decision, NNSA accelerated its "Critical Decision" process to issue a combined CD2/3 authorization⁶ to begin construction of the main UPF building. It based that decision on a claimed "baseline" documenting 90% design completion and construction cost estimates, which NNSA has refused to publicly release.⁷ Additionally, NNSA has undertaken extensive "site

⁵ The 2018 SA places a great deal of reliance on the 2016 Ten Year Site Plan in an apparent attempt to suggest that that document contains a site-wide analysis of projects and their impacts. *E.g.* 2018 SA, at 2. This is improper. The Ten Year Site Plan is not a NEPA document and it does not consider alternatives, take a hard look at impacts, or involve the public. Indeed, NNSA did not even make these documents public at all until litigation from Nuclear Watch under the Freedom of Information Act compelled the agency to publicly post them. NNSA has apparently now removed all of the Site Plans that it once posted and seems to have abandoned the preparation of these documents altogether. This is another indication that NNSA has sought to systematically insulate itself from public scrutiny or public involvement in agency decisionmaking in violation of NEPA.

⁶ DOE's Critical Decision process for a major project is as follows:

CD-1, Approve Alternative Selection and Cost Range

CD-2, Approve Performance Baseline

CD-3, Approve Start of Construction

CD-4, Approve Start of Operations

To mash together CD-2 and CD-3 for a project as troubled as the Uranium Processing Facility is bad practice and bad stewardship of taxpayers' money by NNSA, especially when the agency refuses to publicly release the performance baseline.

⁷ On March 23, 2018, NNSA issued a press release claiming completion of UPF's performance baseline and green lighting its construction (see <https://www.energy.gov/nnsa/articles/uranium-processing-facility-authorized-start-construction-main>). On March 26, 2018, OREPA and NWNM filed a Freedom of Information Act request for the UPF performance baseline, requesting expedited processing. Among other things, the two groups cited pending Congressional legislation that would fund UPF construction (\$703 million requested for FY 2019) as a compelling reason for expedited release. On April 16, 2018, NNSA denied the expedited processing request as not "demonstrat[ing] a compelling need." NNSA has not released any responsive records to date. These numbers are significant because the public is

preparation,” which is for all intents and purposes construction, and has begun working on other buildings at Y-12—without any comprehensive hard look at these re-designed activities.

Legal Background

NEPA is “our basic national charter for protection of the environment.” *Southwest Williamson County Community Assn. v. Slater*, 243 F.3d 270, 274 n.3 (6th Cir. 2001). It “establishes ‘action-forcing’ procedures that require agencies to take a ‘hard look’ at [the] environmental consequences” of their actions. *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). Implementing regulations from the Council on Environmental Quality (“CEQ”) are “binding on all federal agencies,” 40 C.F.R. § 1500.3.

Agencies must prepare an Environmental Impact Statement (“EIS”) for any “major federal action significantly affecting the quality of the human environment.” *Slater*, 243 F.3d at 274 n.3. (citing 42 U.S.C. § 4332(2)(C)). To determine whether impacts are significant, agencies must consider a project’s “context,” which considers “both short- and long-term effects,” as well as the project’s “intensity,” which “refers to the severity of impact” and is evaluated according to ten significance factors. 40 C.F.R. § 1508.27. Any “one of these factors may be sufficient to require preparation of an EIS.” *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 865 (9th Cir. 2005).

One of the twin aims of NEPA is active public involvement and access to information.” *Price Rd. Neighborhood Ass’n v. U.S. Dep’t of Transp.*, 113 F.3d 1505, 1511 (9th Cir. 1997). Thus, NEPA “require[s] [agencies] to articulate, publicly and in detail, the reasons for and likely effects of [their] management decisions, and to allow public comment.” *Kern*, 284 F.3d at 1073. Similarly, because NEPA “reflects the paramount Congressional desire to internalize opposing viewpoints into the decision-making process,” *Cal. v. Block*, 690 F.2d 753, 771 (9th Cir 1982), agencies “shall discuss . . . any responsible opposing view . . . and shall indicate the agency’s response.” 40 C.F.R. § 1502.9(b). NEPA’s “hard look” standard similarly requires agencies to include “high quality information, including accurate scientific analysis. *CBD*, 349 F.3d at 1167.

The analysis of alternatives “is the heart” of an EIS or EA. 40 C.F.R. § 1502.14. NEPA’s implementing regulations require that the decision-making agency “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.” *Id.* Importantly, the NEPA process “shall serve as the means of assessing the environmental impact of proposed agency actions, *rather than justifying decisions already made.*” 40 C.F.R. § 1502.2(g) (emphasis added); *see also id.* § 1502.5 (requiring that NEPA review “shall be prepared early enough *so that it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made*”) (emphasis added).

NEPA requires agencies to prepare a supplemental EIS if “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii); 10 C.F.R. § 1021.314(a). DOE’s regulations

entirely in the dark about the total cost and scope of this project, which will certainly cost billions of taxpayer dollars.

contemplate the use of an SA “[w]hen it is unclear whether or not an EIS supplement is required.” 10 C.F.R. §1021.314(c). An SA “shall discuss the circumstances that are pertinent to deciding whether to prepare” an SEIS and “shall contain sufficient information for DOE to determine whether . . . [a]n existing EIS should be supplemented; [a] new EIS should be prepared; or [n]o further NEPA documentation is required.” *Id.* NNSA’s own policy stresses that if an agency alters its plans so that its “proposed action differs substantially from all alternatives analyzed in an existing EIS,” an SEIS is necessary “without the need for an SA . . . even if the impacts are likely to be smaller than those estimated in the existing EIS.”⁸

Whether new information is sufficiently significant to necessitate an SEIS “turns on the value of the new information to the still pending decisionmaking process.” *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989). Where “new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.” *Id.* The term “significant” in the SEIS context is defined according to the CEQ’s regulations. *Id.* at 374 n.20 (quoting 40 C.F.R. § 1508.27).

“NEPA makes no distinction between initial actions and subsequent changes to initial actions, and the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance.” *United States v. City of Detroit*, 329 F.3d 515, 529 (6th Cir. 2003) (Moore, J., concurring). “That is, if the change itself constitutes a major federal action that will significantly affect the environment, the agency must prepare an SEIS.” *Id.* Similarly, because the decision whether to prepare an SEIS is similar to the decision to prepare an EIS in the first instance, new information that “raise[s] substantial questions regarding the project’s impacts [is] enough to require further analysis.” *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 561–62 (9th Cir. 2006). Moreover, where an EIS rejected an alternative on environmental grounds, but an agency shortly thereafter adopts a decision that resembles the rejected alternative, the agency must prepare an SEIS. *Id.*

Under NEPA, to determine the proper scope of an EIS, an agency “shall consider 3 types of actions,” including connected actions, cumulative actions, and similar actions. *Id.* § 1508.25. Connected actions are those that “[a]utomatically trigger other actions which may require environmental impact statements . . . [,] cannot or will not proceed unless other actions are taken previously or simultaneously . . . [,] or are interdependent parts of a larger action and depend on the larger action for their justification.” *Id.* § 1508.25(a)(1). Cumulative actions are those that “with other proposed actions have cumulatively significant impacts.” *Id.* 1508.25(a)(2). And similar actions “when viewed with other reasonably foreseeable or proposed agency actions have similarities that provide a basis for evaluating their environmental consequences together.” *Id.* § 1508.25(a)(3). An agency should analyze similar actions together “when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.” *Id.*

Because NEPA requires agencies to consider connected actions, cumulative actions, and similar actions together in a single EIS, agencies may not segment an action to avoid application

⁸ Recommendations for the Supplement Analysis Process, U.S. Department of Energy, Environment, Safety and Health Office of NEPA Policy and Compliance, July 2005, p. 4.

of the NEPA process. *See Tenn. Env't Council v. Tenn. Valley Auth.*, 32 F. Supp. 3d 876, 890 (E.D. Tenn. 2014). “The hallmark of improper segmentation is the existence of two proposed actions where the proposed component action has little or no independent utility and its completion may force the larger or related project to go forward notwithstanding the environmental consequences.” *Hirt v. Richardson*, 127 F. Supp. 2d 833, 842 (W.D. Mich. 1999). Under this rule, “multiple stages of a development must be analyzed together when the dependency [between them] is such that it would be irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken.” *Id.* (citing *Thomas v. Peterson*, 753 F.2d 754, 759 (9th Cir. 1985)).

NEPA’s implementing regulations also specify an agency’s duties when it is making a decision on the basis of incomplete information. Where incomplete information is “relevant to reasonably foreseeable adverse impacts” and “essential to a reasoned choice among alternatives,” the agency “shall” gather that information and include it in its NEPA analysis. *Id.* § 1502.22(a). Although in limited circumstances an agency may conclude that obtaining missing information is exorbitantly costly, or that the means to obtain it are not known, an agency “shall always make clear that such information is lacking,” and in that event must consider all existing scientific evidence and analyze any “impacts which have catastrophic consequences, even if their probability of occurrence is low.” *Id.* § 1502.22(b). The failure to comply with this requirement necessarily means that the agency has “fail[ed] to consider an important aspect of the problem, resulting in an arbitrary and capricious decision.” *Northern Plains*, 688 F.3d at 1085.

“The very purpose of NEPA[] . . . is to obviate the need for speculation by insuring that available data [are] gathered and analyzed prior to the implementation of the proposed action” *LaFlamme v. F.E.R.C.*, 852 F.2d 389, 400 (9th Cir. 1988). Accordingly, NEPA requires an agency to gather the necessary information and to prepare an EIS *before* taking implementing actions. *National Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 732 (9th Cir. 2001) (abrogated on other grounds by *Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139 (2010)) (finding that an agency “has the process exactly backwards,” where it implements an action before completing its studies because under these circumstances, completion of ongoing studies is “required *before* a decision that may have a significant impact on the environment is made,” rather than “increas[ing] the risk of harm to the environment and then perform[ing] its studies”). “NEPA requires more” than an agency “ask[ing the public] to assume the adequacy and accuracy of partial data without providing any basis for doing so.” *WildEarth Guardians, v. Montana Snowmobile Ass’n*, 790 F.3d 920, 927 (9th Cir. 2015). Through this approach, “NEPA emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decisionmaking to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.” *Id.*

“It is DOE’s policy to follow the letter and spirit of NEPA; comply fully with the CEQ Regulations; and apply the NEPA review process early in the planning stages for DOE proposals.” 10 C.F.R. § 1021.101.⁹

⁹ DOE should be acutely aware of the value of fully complying with the NEPA process, since comments from Nuclear Watch submitted during the NEPA process for another project actually helped avert a catastrophe. In 1998, Nuclear Watch New Mexico submitted extensive comments on a draft Site-Wide Environmental Impact Statement for the Los Alamos National Laboratory (LANL), noting that it did not analyze the threat of wildfire. In

Discussion

I. The 2018 SA fails to adequately consider new information or changed circumstances.

As described above, the 2018 SA is transparently an attempt to correct the deficiencies identified in *OREPA v. Perry* by providing nominal attention to the matters that NNSA clearly ignored in its 2016 SA and in its rejection of OREPA and Nuclear Watch’s petition for a new or supplemental EIS. The 2018 SA concedes that it “consider[s] new information not previously considered in the 2016 SA,” 2018 SA at 5 n.1—including “new” information that was in fact available to DOE in 2016. This is tantamount to an admission that the 2016 SA overlooked such information, as OREPA, Nuclear Watch, and NRDC have maintained. However, the 2018 SA does not rectify the violation of NEPA because its discussion of the changed circumstances and new information since the 2011 SWEIS is so cursory and logically deficient that it wholly fails to accomplish the “hard look” NEPA mandates.

A. The 2018 SA is not a substitute for a site-wide EIS.

The 2018 SA acknowledges that since NNSA issued the 2011 SWEIS, “there has not been a site-wide examination of the remainder of the activities at Y-12.” 2018 SA at 5. The NNSA clearly views the 2018 SA as serving this role. *Id.* (“Consequently, this SA is needed”). However, for several reasons, the SA does not serve—and is not intended to serve—a role even remotely like an EIS.

As described above, an EIS requires a hard look at environmental impacts and, critically, all reasonable alternatives *before an agency takes implementing action*, and is designed to help agencies make informed decisions. In contrast to the forward-looking nature of an EIS, the 2018 SA is inherently backward looking, “with a focus on the changes and new information *that have occurred at Y-12 since publication of the 2011 SWEIS.*” 2018 SA, at 5 (emphasis added). Nor does the SA involve the consideration of *any alternatives*. Instead, the SA constitutes NNSA’s post-hoc attempt to justify decisions that it made *without any consideration of alternatives under NEPA*, such as the re-design of the UPF and the development of the ELP. And to the extent that the SA contemplates future actions it does so only “within the next five years.” 2018 SA, at 5. In contrast, an EIS’s temporal scope cannot be arbitrarily limited in this manner, and must instead consider all reasonably foreseeable future actions and impacts.

Additionally, although the 2018 SA purports to consider some—but not all—new actions at Y-12 in a discussion of “cumulative impacts, 2018 SA, at 49–52, the fact that NNSA clearly believes that the 2011 SWEIS’s discussion of cumulative impacts needs to be updated is actually an indication that a new or supplemental EIS is necessary. Moreover, merely treating these

response, the final 1999 LANL SWEIS postulated a fire that started in Bandelier National Monument and threatened the Lab. Following that, LANL instituted various fire mitigation measures, including cutting fire lanes around Area G, which stores above ground radioactive transuranic wastes. The all-too-real 2000 Cerro Grande Fire eerily matched the hypothetical LANL SWEIS fire, burning to within a half-mile of Area G. Thus, the NEPA process concretely helped prevent a true catastrophe.

numerous activities—most which have never been analyzed in any NEPA document and many of which never will be—as cumulative impacts in an SA is a flagrant and unlawful segmentation of the legally required NEPA analysis (as discussed more thoroughly below).

Indeed, the fact that NNSA had to collect substantial information for this SA is itself an indication that an SA is not the appropriate analysis for the agency to use. As DOE’s *Recommendations for the Supplement Analysis Process* states, “[t]he need for extensive data collection and analysis in order to complete an SA may be an indicator that a change in the proposed action is ‘substantial’ or that new circumstances or information requiring additional data for appropriate analysis are ‘significant.’”¹⁰ That is certainly the case here.

Because the 2018 SA serves a fundamentally different—and far more constricted—role than an EIS, it is not in any way a substitute for the EIS that OREPA and Nuclear Watch requested in their petition and that is the subject of *OREPA v. Perry*.

B. The 2018 SA arbitrarily imposes a 5-year limit on its analysis in defiance of logic and law.

One glaring and critical defect of the 2018 SA is that it arbitrarily imposes a 5-year limit on its analysis that lacks any basis in law or logic. The 2018 SA only covers “the 2018-2023 period.” 2018 SA, at S-1. The 2018 SA does not explain the basis for this arbitrary limitation. DOE’s regulations certainly do not require it. *See* 10 C.F.R. § 1021.314 (containing no such limitation on the scope of an SA). To the contrary, although DOE regulations require reconsideration of a site-wide EIS at least every five years through an SA, *id.* § 1021.330(d), DOE’s regulations require an SA to “contain sufficient information for DOE to determine” whether to prepare a new or supplemental EIS, *id.* § 1021.314(c)(2)—which may well require looking past an arbitrary 5-year period. Nor does DOE’s *Recommendations for the Supplement Analysis Process* contain any such restriction on SAs; instead, it lists as an example an SA for an amended decision (which is what the 2018 SA is) that considered a ten-year period.¹¹ Nor is this narrow five-year focus NNSA’s practice. In fact, even the 2016 SA did not limit itself to a five-year period. *See, e.g.*, 2016 SA at 30 (discussing facilities expected to come online in 2025). Accordingly, there is no plausible justification in DOE’s own regulations and guidelines for the 2018 SA’s arbitrary and self-imposed limit of five years.

More important, in patent violation of NEPA, the 2018 SA’s five-year limit causes it to wholly ignore actions with significant environmental impacts. For example, the Excess Facility Disposition Program, which deals with the decommissioning and decontamination of contaminated old buildings, “is beyond the planning horizon of this SA” because it is anticipated to begin in 2023. The 2018 SA does not state that NNSA or DOE intend to perform any NEPA analysis for this Program.

Similarly, the 2018 SA “does not analyze” numerous projects because they are outside the SA’s arbitrary 5-year focus. These projects include the West End Change House, the Applied

¹⁰ Department of Energy, *Recommendations for the Supplement Analysis Process*, July 2005, at 5.

¹¹ *Id.* at Attachment 2.

Technology Laboratory, the Consolidated Manufacturing Complex, the Maintenance Complex, the Non-Material Access Area Storage Complex, the Warehouse/Shipping and Receiving Complex, the Waste Management Complex, the EU Fabrication Replacement Facility, and the Assembly/Disassembly/Surveillance/Certification Replacement Facility. 2018 SA at 16. The 2018 SA states that “NNSA would prepare appropriate NEPA documentation for these projects at the appropriate time,” *id.*, but the appropriate NEPA documentation is a new or revised site-wide EIS, and the appropriate time is now.

The 2018 SA’s arbitrary and self-imposed five-year limit on its scope of analysis is arbitrary and capricious because it deprives the SA of information necessary for DOE or NNSA to rationally consider whether to prepare a new or supplemental EIS.

C. The 2018 SA acknowledges that NNSA continues to consider alternatives for critical activities, but refuses to do so in any NEPA process.

The 2018 SA is also contrary to NEPA because it acknowledges that NNSA is continuing to evaluate alternatives for important Y-12 modernization activities, but refusing to do so in the framework of any NEPA process. As discussed above, the analysis of alternatives is “the heart” of NEPA analysis, which is intended to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14. As it has re-designed the modernization of Y-12, NNSA has been engaging repeatedly in consideration of project alternatives that should be part of the NEPA process—not least because the NEPA process would allow the public to have some information and input. The 2018 SA demonstrates that NNSA is continuing to engage in this arbitrary and capricious behavior.

Thus, the 2018 SA notes that “[w]hile important modernization/transformation activities have already been accomplished, the overall vision will continue to be a work in progress.” 2018 SA, at 2. Similarly, the SA confirms that for individual modernization activities—for which NNSA is not utilizing the NEPA process—the agency continues to consider alternatives. For example, “DOE is actively evaluating alternatives for the disposition of facilities such as Alpha 5.” 2018 SA at 15. The consideration of alternatives for this facility—which is “the worst of the worst” according to DOE¹²—is precisely the type of activity with significant environmental impacts that requires analysis in an EIS and on which the public should have input.

The ELP provides another clear example of NNSA’s ongoing consideration of alternatives in a manner that should be open to public input in an EIS process. As described below, there can be no legitimate dispute that the ELP is a new major federal action with significant environmental impacts. Moreover, the 2018 SA confirms that NNSA is continuing to consider alternatives for what upgrades may be possible to make the ongoing use of existing, vulnerable buildings safer. *See* 2018 SA, at 18 (“NNSA is also evaluating the existing facilities in terms of natural phenomena analyses, structural analyses, criticality vulnerability studies, and targeted upgrades.”); *see also id.* (“NNSA acknowledges that the documented safety basis reports for the existing Y-12 facilities will need to be updated to reflect updates seismic hazard

¹² Dep’t of Energy Inspector General, *Audit Report: The Department of Energy’s Management of High-Risk Excess Facilities*, January 2015, at 3.

information from both the 2014 USGS report/maps and seismic studies currently being prepared.”).

Because the 2018 SA reveals that NNSA is continuing to consider alternatives for activities that should be properly subject to the EIS process—and because the consideration of alternatives is “the heart” of that process—the 2018 SA erroneously concludes that no further NEPA analysis is necessary.

D. The 2018 SA fails to adequately respond to concerns raised by the DNFSB and DOE IG

Relatedly, the 2018 SA’s treatment of the input from the DNFSB and the Department of Energy’s Inspector General violates NEPA because the SA reveals that in response to this critical input NNSA is continuing to evaluate alternatives and re-design various projects without engaging in any further NEPA process. Thus, the 2018 SA’s response to the Department of Energy’s Inspector General Report on the management of high-risk excess facilities is that as a result of that report “DOE is actively evaluating alternatives for the disposition of facilities such as Alpha 5.” 2018 SA at 15.

Similarly, with regard to the DNFSB’s 2014 structural evaluation of Building 9204-2E and the 9215 Complex, which indicated that these facilities have serious structural defects and that NNSA should carefully consider those defects using particular methodologies *before* implementing retrofits of these buildings, the 2018 SA’s response is that NNSA has already implemented certain retrofits and continues to consider alternatives for what it may be able to do to render these buildings safer—but will not do so in any NEPA process. *See* 2018 SA, at 9 (noting 67 categorical exclusions for ELP activities); *see also id.* at 18 (noting that NNSA is still considering how to upgrade these facilities). Notably, the 2018 SA does not state whether NNSA will conduct the specific analyses that the DNFSB recommended, and because it has excluded the public from the development of the ELP, the public has no way to know whether NNSA will ever conduct these analyses, or whether the agency will instead treat this as a risk that the public has to blindly accept.

The same trend holds true for the response to the DNFSB’s 2017 commentary on the ELP Safety Strategy. Notably, the DNFSB informed NNSA that Building 9204-2E and the 9215 Complex could experience an uncontained nuclear criticality accident in the event of a large earthquake. The 2018 SA now notes that the “safety basis reports” on which the DNFSB was commenting are “‘living documents,’ meaning they are updated as new information becomes available that may affect the safe operation of a DOE/NNSA facility.” 2018 SA, at 17. Thus, again, the 2018 SA indicates that NNSA’s response to the DNFSB’s input is an ongoing evaluation of alternatives undertaken outside of any NEPA process and without any public input.

In light of the fact that the 2018 SA acknowledges that NNSA is responding to the DNFSB’s input through a re-design of critical activities including an ongoing consideration of alternatives, the 2018 SA thus effectively concedes that a new EIS is necessary, because the EIS process is designed to allow an agency to make an informed decision among alternatives. The 2018 SA’s contrary conclusion that no further environmental analysis is necessary contravenes

NEPA, particularly in light of the requirement in the NEPA implementing regulations that NEPA analysis “shall be prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made.” 40 C.F.R. § 1502.5. Once again, DOE appears determined to unlawfully invert the NEPA process by using the process to rubber-stamp decisions already made, while studiously avoiding the process for decisions yet to be made. This is the very opposite of what NEPA contemplates.

E. The 2018 SA fails to adequately consider new information about seismic risks.

As described above, the aging Building 9204-2E and the 9215 Complex have structural deficiencies that make them vulnerable to damage and even collapse in the event of an earthquake. The vulnerability of the aging buildings at Y-12 to earthquakes makes it critical that NNSA devote thorough and careful attention to any new information about seismic risks. NNSA’s failure to consider new information about seismic risks for these aging facilities in its 2016 SA was one of the reasons for OREPA and Nuclear Watch’s petition for a new or revised EIS and the subsequent lawsuit. In a clear recognition of NNSA’s failure to consider this issue adequately in 2016, the agency now offers a cursory discussion of seismic risks for aging facilities in the 2018 SA.

To evaluate NNSA’s consideration of new information about seismic risks, OREPA and Nuclear Watch consulted an eminent geophysicist, Dr. David Jackson. Dr. Jackson is a Distinguished Professor Emeritus from the University of California, Los Angeles (UCLA), with over 45 years of relevant experience. Dr. Jackson has extensive “experience considering seismic issues, in particular with regard to probabilistic seismic hazard analysis, statistical data analysis, earthquake forecasting and prediction, and the consideration of likely damage from earthquakes.” Attachment A, at 1. Among other professional activities, he has: served as the President of the Seismology Section of the American Geophysical Union and Science Director of the Southern California Earthquake Center; served on an earthquake-related research panel for the National Academy of Sciences; advised the Governor of California by serving on the California Earthquake Prediction Evaluation Council; and served on the National Earthquake Prediction Evaluation Council, an advisory committee to the USGS created by Congress to provide expert advice on how to issue timely warnings of potential geological disasters. *Id.* In short, he has impeccable credentials to opine on the adequacy of DOE’s analysis of earthquake risk.

Based on his review of the 2018 SA and other pertinent materials, Dr. Jackson’s “professional opinion” is that “NNSA has conducted no rigorous seismic hazard evaluation associated with its activities at the Y-12 National Security Complex.” *Id.* As Dr. Jackson explains, “NNSA’s review is not a scientifically based review of seismic risks.” *Id.* Instead, the agency’s consideration of seismic issues “falls far short of relevant professional and scientific standards, offers a simplistic analysis of risks that fails to disclose or properly analyze critical underlying data, entirely fails to consider highly relevant new data from the USGS, fails to employ a modern set of tools for analyzing seismic risks, chooses an arbitrary measurement of

risk, and fails to respond in any coherent manner to new information furnished by the USGS and the Defense Nuclear Facilities Safety Board.” *Id.*

1. *The 2018 SA fails to adequately consider new information from the USGS.*

In his report, Dr. Jackson specifically explains the extent and importance of NNSA’s failure to consider highly relevant information from the USGS. As Dr. Jackson notes, when the USGS issues updated seismic hazard maps, it also makes the underlying data freely available to the public. Attachment A, at 2. These underlying data allow for a more thorough evaluation of risks than the less nuanced color-coded maps. In particular, “the underlying data show that, while much larger earthquakes are less likely, very strong shaking at Y-12 is a real possibility and merits much more rigorous consideration.” *Id.* Dr. Jackson explains that in his expert opinion, “the hazardous nature of the work done at Y-12, the importance of this work, and the vulnerability of the aging buildings warrant more careful analysis and consideration of less frequent but much larger shaking than that reported for 2% in 50 years.” *Id.* However, as Dr. Jackson notes, “NNSA apparently relied only on the color maps, ignoring the precise underlying data”; as a result, “NNSA’s analysis of the USGS’s input lacks rigor because the map color is only an approximation of the full results.” *Id.*

Dr. Jackson also explains that NNSA’s focus on a “2 percent over fifty years” standard for earthquakes is itself arbitrary. *Id.* That standard “is an arbitrary one that seismologists have in the past used to communicate with engineers, because engineers often assume that a 2 percent risk is acceptable for most buildings and that most buildings have a 50-year lifespan.” *Id.* Dr. Jackson notes that “[t]hese assumptions are not appropriate for the buildings at Y-12 because these buildings are already more than 50 years old and house extremely hazardous processes and materials that are critical to the NNSA’s Enriched Uranium Program.” *Id.* Nonetheless, as Dr. Jackson states, the NNSA has only considered the “2 percent over 50 years” standard when comparing the 2008 and 2014 seismic hazard maps. *Id.* As Dr. Jackson explains, NNSA’s “narrow focus on a single aspect of the difference between the USGS reports is inappropriate,” and “the hazardous and important nature of the activities at Y-12, and the fact that these buildings are old, decaying, and not constructed according to modern standards . . . warrant consideration of risks that are less likely but far more disastrous.” *Id.*

Dr. Jackson also explains that the USGS issued additional seismic hazard reports in 2016, 2017, and 2018, along with their underlying data, and that NNSA has wholly failed to address these in any manner. These reports reveal “even greater hazard than that represented in the 2014 map,” including the risk of an earthquake that would be “far greater than the levels that the aging buildings at Y-12 could likely withstand.” *Id.*

Additionally, Dr. Jackson describes a recent scientific study that “clearly indicates that the [Eastern Tennessee Seismic Zone], including the neighborhood of Y-12, is capable of magnitude 6 and larger earthquakes.” *Id.* at 3; *see also* Attachment C. This new information regarding the possibility of such large, damaging earthquakes merits close attention from NNSA.

As Dr. Jackson concludes, “[t]he updated USGS seismic hazard estimates are important and constitute new information that NNSA should carefully consider,” but “NNSA has fallen far

short of a professional, scientific consideration of the issues by neglecting the recent USGS studies.” Attachment A, at 2.¹³

2. *NNSA has failed to analyze the risks associated with the ongoing use of vulnerable buildings at Y-12.*

Dr. Jackson also explains that NNSA has failed to analyze the risks associated with the continued use of Building 9204-2E and the 9215 Complex both by failing to conduct a modern analysis of these buildings’ vulnerability and by failing to consider the secondary effects of earthquakes. As Dr. Jackson states, “building standards and the techniques used to evaluate risks have changed very significantly” since these buildings were constructed. *Id.* at 4. In particular, “building standards have become far more rigorous and now require certain structural elements that allow buildings to better withstand the forces associated with an earthquake.” *Id.* However, “although NNSA acknowledges that the existing buildings at Y-12 are not built according to modern building standards and do not meet modern safety codes, including seismic safety codes, NNSA has obfuscated the importance of this issue.” *Id.*

In particular, NNSA has failed to implement “[m]odern analysis of seismic risk,” which “entails the use of sophisticated computer models that simulate many hundreds of potential earthquakes and their likely effects on a structure” and which “would be far more effective at modeling the likely impacts on these buildings from earthquakes of various sizes.” *Id.* According to Dr. Jackson’s expert analysis, “the failure to use these modern tools is a significant deficiency in NNSA’s analysis.” *Id.*

Dr. Jackson also explains that “NNSA’s failure to implement any non-linear modeling of seismic hazard risks—even after the DNFSB expressly recommended this analysis—is a glaring deficiency.” *Id.* By failing to implement the DNFSB’s recommendation, NNSA has failed to account for “progressive degradation,” a process in which even moderate shaking can cause different building components to weaken or fail. As Dr. Jackson notes, “even a weak earthquake may be sufficient to damage or destroy weaker building components,” and “[o]nce certain portions of a building’s structure fail, the other components likely face greater stress potentially leading to collapse of the entire building.” *Id.* Therefore, “NNSA’s failure to follow DNFSB’s recommendation to use modern analytical techniques is another egregious defect in its consideration of seismic risk.” *Id.* As Dr. Jackson explains, “[t]he fact that the buildings at Y-12 have not been updated to meet modern standards—and in all likelihood *cannot be upgraded to meet these standards*—is not merely a failure on paper to meet a building code,” because “[t]he structures themselves lack the features that modern engineering analysis shows to be necessary to withstand earthquake shaking.” *Id.* at 4-5.

NNSA’s failure to meaningfully consider the risks to its aging buildings from even moderate earthquakes using modern analytical tools renders its failure to consider secondary

¹³ NNSA has also never considered the impacts associated with hydraulic fracturing (“fracking”), which has been shown to cause numerous earthquakes even in areas where no such earthquakes previously occurred or were very uncommon. There is fracking in Anderson County, where Y-12 is located. NNSA’s consideration of seismic risks should evaluate whether fracking and consequent induced seismicity may pose additional risk for any facilities at Y-12.

hazards especially important. Dr. Jackson explains that secondary hazards “include liquefaction, in which seismic shaking causes soil to lose cohesion, which can undermine building foundations or roads; landslides; fires caused by damage to electrical components and containers of flammable fluids; access and safety constraints on emergency response; and the risk that effects on one building could carry over to nearby buildings.” *Id.* at 3. Additionally, “[t]hese risks are especially important where, as in the Y-12 Complex, existing buildings are located very near to one another and are already in advanced states of disrepair.” *Id.* Particularly notable secondary hazards at Y-12 include the possibility of fire “even in a small earthquake,” the prospect that fire could easily spread from one aging building to other nearby buildings, and the possibility that “[c]ollapse of one building could initiate a domino effect and compromise the integrity of buildings nearby.” *Id.* at 4. NNSA has not given any attention to the secondary hazards of earthquakes, which Dr. Jackson also describes as a “glaring defect.” *Id.*

For these reasons, Dr. Jackson concludes that “in [his] professional opinion, NNSA’s analysis is patently deficient, and a more thorough consideration of the seismic risks associated with the ongoing use of aging, vulnerable buildings at the Y-12 Complex is necessary, particularly in light of the hazardous and important work done at these facilities.” *Id.* at 5. To comply with NEPA, that consideration must occur in an EIS or SEIS.¹⁴

3. *NNSA’s reliance on a “bounding” analysis is inappropriate.*

The 2018 SA acknowledges that NNSA does not know how new information about seismic hazards affects the risk of continuing to use existing, dilapidated buildings. Indeed, the SA concedes that “[a]ccident risks associated with earthquakes presented in the 2011 SWEIS could change proportionately to the change in probability of an earthquake occurring.” 2018 SA at 41. However, NNSA is admittedly gambling—without knowing—that the removal of some nuclear material from these buildings will offset any increased risk: “Without knowing the specific change in the earthquake probability, it would be speculative to estimate which of these factors (increased probability of an earthquake versus [nuclear material] reduction would have the bigger effect on the risk conclusion.” 2018 SA, at 41. And the SA defers any meaningful analysis of the extent of the risk, claiming that the agency must first complete additional studies, which will not happen until 2019, before it can *begin* to update the “safety basis reports” for the existing buildings and *begin* to determine what upgrades *may* be possible to make these buildings safer. 2018 SA, at 28.

Nevertheless, in the face of this uncertainty and incomplete information, the 2018 SA asks the public simply to accept NNSA’s assurance that “it is not expected that this new seismic information will increase the accident consequences or risks associated with the continued operation of existing facilities.” 2018 SA, at 28. NNSA’s reasoning is that the new “risks and consequences are lower than those projected in the 2011 SWEIS and bounded by the accident

¹⁴ NNSA’s analysis of the design of the new buildings UPF is problematic as well. NNSA asks the public to accept that seismic design requirements for these buildings are conservative, but NNSA has apparently not taken into consideration any new information from the USGS or other sources when creating these design requirements. We remain concerned that NNSA is employing an unduly lax level of reduction of risk inputs to these requirements as well. One cannot, in principle, know whether these design requirements are adequate without knowing the significance of new information about seismic risks.

analysis in that document.” 2018 SA, at 18. In particular, because “NNSA believes that the accidents with the highest potential consequences to the offsite population would remain the aircraft crash into the [enriched uranium] facilities . . . and the accident with the highest risk would be the design-basis fire for [highly enriched uranium] storage . . . NNSA does not believe there would be a significant change in bounding impacts as a result of the reports identified in [the 2018 SA], or any new information that has become available since publication of the 2011 SWEIS.” 2018 SA, at 41. In other words, because NNSA does not believe that an earthquake would be as catastrophic as an airplane crash or as likely as a large fire, it refuses to conduct any further NEPA analysis.

NNSA’s refusal to conduct any NEPA analysis about its decision to continue to use aging, vulnerable buildings, the seismic risks associated with that decision, or its ongoing consideration of whether and how those buildings can be upgraded, in reliance on the belief that the risks associated with this decision are not as dire as an airplane crash or a large fire makes no sense and is a blatant violation of NEPA. NEPA requires an environmental analysis for any major federal action with significant effects on the human environment; as discussed further below, NNSA’s decision to continue using aging, vulnerable buildings for hazardous activities essential to the agency’s national security mission easily meets this definition. Moreover, the NEPA process is designed to allow an agency to identify alternatives with *lesser* environmental impacts; the NNSA’s bounding analysis flagrantly ignores this purpose of NEPA. Additionally, NEPA’s implementing regulations plainly do not allow an agency to avoid the duty to take a hard look at the environmental consequences and risks of its decisions by merely stating that a decision’s risks are “bounded by” (i.e., less harmful than) some other catastrophic event the agency has previously considered.

NEPA’s implementing regulations make clear that an agency must prepare a supplemental EIS if “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii); 10 C.F.R. § 1021.314(a). NNSA’s decision to continue using aging buildings is a new circumstance, and the agency has indisputably received new information about the seismic hazards associated with this decision; moreover, it is beyond any legitimate dispute that these new circumstances are highly relevant to environmental concerns and bear on this decision and its impacts. Refusing to prepare an SEIS merely because the impacts and risks associated with the new decision may not be as catastrophic as an airplane crash clearly violates the NEPA implementing regulations and make no legal or logical sense in view of NEPA’s paramount purpose to inform agency decision making.

Indeed, DOE’s own policies make it abundantly clear that any reliance on a “bounding” analysis is inappropriate here. DOE’s guidance on “Using Bounding Analyses in DOE NEPA Documents” makes clear that bounding analysis amounts to using “simplifying assumptions,” and should only be used in narrow circumstances “where the differences among alternatives would not be obscured.”¹⁵ The guidance also clearly states that “bounding analysis should not be used where more accurate and detailed assessment is possible and would better serve the

¹⁵ Dep’t of Energy, Office of NEPA Policy and Compliance, *Lessons Learned Quarterly Reports: December 1994 to September 2005*, October 2005 at 2-4 (attached here as Attachment F).

purposes of NEPA.”¹⁶ And as most directly relevant here, the guidance also stresses that “[i]t is never appropriate to ‘bound’ the environmental impacts of potential future actions . . . and argue later that additional NEPA analysis is unnecessary because the impacts have been bounded by the original analysis.”¹⁷ NNSA’s use of a bounding analysis goes directly against this guidance from DOE’s Office of NEPA Policy and Compliance, in that NNSA is using it *precisely to avoid further NEPA analysis* regarding a new, previously unanalyzed action in a manner that violates NEPA and its implementing regulations, and is arbitrary and capricious.

Similarly, DOE’s own *Recommendations for the Supplement Analysis Process* do not include any suggestion that a bounding analysis is appropriate. To the contrary, that document also stresses that if an agency alters its plans so that its “proposed action differs substantially from all alternatives analyzed in an existing EIS,” an SEIS is necessary “without the need for an SA . . . even if the impacts are likely to be smaller than those estimated in the existing EIS.”¹⁸ This standard is easily satisfied here as well. When NNSA determined that the “big box” UPF was too expensive and went back to the drawing board, the agency designed and selected a new action that is substantially different from the alternatives considered in the 2011 SWEIS. In fact, the 2018 SA flatly concedes that the decision to build multiple new UPF buildings “was different from the Capability-sized UPF Alternative” in the 2011 SWEIS. 2018 SA, at 5. Similarly, the decision to continue to use aging, vulnerable buildings is substantially different from the “upgrade-in place alternative” in the 2011 SWEIS because that alternative committed to upgrading existing buildings “to the extent possible” while the NNSA’s subsequent decision is profoundly limited by cost (as discussed in greater detail below). Indeed, the greatest difference between the agency’s 2011 SWEIS and ROD and its subsequent decision is that the former was motivated principally by safety, security, and efficiency, while the latter decision is based principally on cost. The result is a substantial difference, because NNSA’s re-design of the UPF project and its decision to continue to rely on aging, vulnerable buildings was made principally on the basis of a factor that was not determinative during the 2011 SWEIS.

Particularly with regard to the decision to continue to use aging buildings, the difference between a prior analysis based on safety and a new decision based on cost is stark. The 2011 SWEIS’s discussion of the upgrade in place alternative did not state that it would be constrained by cost. 2011 SWEIS, at 1-15; 3-23–3-25. Instead, without stating that cost would be a limiting factor, the 2011 SWEIS indicated that under the “upgrade in place” alternative, NNSA would “upgrade the existing . . . facilities to contemporary environmental, safety, and security standards to the extent possible within the limitations of the existing structures.” 2011 SWEIS at 3-23; *see also id.* at 3-24 (noting that because the buildings “do not meet current codes and standards related to . . . earthquakes . . . they would require structural upgrades *to bring the buildings into compliance*” (emphasis added)).

In sharp contrast, the NNSA’s new decision is expressly based on the notion that “it would be prohibitively expensive to upgrade 50+ year old facilities to current seismic standards” and that for this reason NNSA would not do so. 2016 SA, at 30. The fact that the agency has

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Recommendations for the Supplement Analysis Process*, U.S. Department of Energy, Environment, Safety and Health Office of NEPA Policy and Compliance, July 2005, p. 4.

injected a previously unconsidered limitation on bringing aging, vulnerability into compliance with modern *safety* standards based on *cost*—a factor not considered for this alternative in the 2011 SWEIS—clearly shows that the agency’s new decision to continue to rely on these buildings is substantially different from the alternative previously analyzed. Thus, applying DOE’s own *Recommendations for the Supplement Analysis Process*, a new or supplemental EIS is required and NNSA’s reliance on a bounding analysis is inappropriate.

NNSA’s reliance on a bounding analysis is also a violation of NEPA’s implementing regulations that govern an agency’s duties when making a decision based on incomplete information. As a general matter, where incomplete information is “relevant to reasonably foreseeable adverse impacts” and “essential to a reasoned choice among alternatives,” the agency “shall” gather that information and include it in its NEPA analysis. 40 C.F.R. § 1502.22(a). Only if the “costs of obtaining it are exorbitant or the means to obtain it are not known” may the agency take the recourse of merely analyzing “impacts with catastrophic consequences, even if their probability of occurrence is low.” *Id.* § 1502.22(b). Here, NNSA has flipped this approach on its head; instead of gathering all the necessary information that is relevant to the adverse impacts of continuing to use aging buildings and that is essential to a reasoned choice among alternatives for upgrading these buildings to make them safer, NNSA has simply relied on a past discussion of a few impacts with catastrophic consequences to avoid meaningful NEPA analysis altogether. Nor has NNSA asserted that the costs of obtaining information about the risks of using aging buildings is exorbitant, or that the means of obtaining this information are unknown; instead, NNSA has stated that it is already in the process of obtaining this information *even while the agency implements a decision it has made unmoored from any NEPA analysis*.

Again, however, NNSA has “has the process exactly backwards.” *National Parks*, 241 F.3d at 733. “[T]he ‘hard look’ must be taken before, not after, the environmentally-threatening actions are put into effect.” *Id.* Especially under these circumstances, the agency’s reliance on a bounding analysis to refuse to prepare an EIS or SEIS violates NEPA.¹⁹

II. The Extended Life Program requires an EIS, and NNSA’s failure to conduct any NEPA analysis for this Program is unlawful.

As described above, NNSA decided in 2014 to abandon the “big box” UPF project and instead to continue to locate mission-critical activities in the aging, vulnerable Building 9204-2E and the 9215 Complex. As the DNFSB notified NNSA, “Building 9204-2E and the 9215 Complex have known structural performance deficiencies and do not meet modern structural design requirements,” and “[t]hese deficiencies result in an increased potential for structural collapse and release of radiological material following certain seismic events.” Nevertheless, NNSA intends to continue to rely on these deteriorating buildings for activities that are essential to its entire Enriched Uranium Program for at least another 25 years. NNSA has stated that

¹⁹ As described above, NNSA’s new ELP is starkly different from what the agency analyzed in 2011, in large part because the agency is now guided primarily by cost rather than by safety, security, or efficiency. However, even if the agency were correct in its belief that the ELP resembles the “upgrade in place” alternative that the agency rejected in 2011, a supplemental EIS would still be required. An SEIS is necessary where an agency rejects an alternative on environmental grounds, but then adopts a decision that resembles the rejected alternative without further environmental analysis. *Boody*, 468 F.3d at 561–62

because a replacement facility for Buildings 9204-2E and the 9215 Complex may not be available until the 2040s, “it is imperative to sustain these facilities.”²⁰

In February 2015, NNSA initiated an Extended Life Program (“ELP”) to keep these buildings operational.²¹ The ELP involves some renovations of these buildings’ infrastructure, but is fundamentally driven by cost considerations. Indeed, NNSA has conceded that “[t]he premise of the ELP is that some risk acceptance will occur in lieu of spending”²² Because the ELP’s premise is that it too costly to upgrade these buildings to modern safety standards, the ELP is a significant departure from the “upgrade in place” alternative that NNSA analyzed in its 2011 SWEIS, under which these buildings “would be upgraded to contemporary environmental, safety, and security standards to the extent possible.”²³ Indeed, recognizing that the ELP was not discussed in the 2011 SWEIS, the ELP Implementation Plan states that “[a]s ELP is a new endeavor, the scope . . . has morphed over the [first] year of developing ELP,” i.e. 2015.²⁴ Additionally, because NNSA has abandoned the intention to upgrade these buildings to modern safety standards, the agency also foresees that these buildings may experience significant outages, and “a new, robust outage program is required.”²⁵

The ELP does not state with any specificity what NNSA will or even can do to bring Building 9204-2E or the 9215 Complex to a safe state. Instead, NNSA offers only a moving target, noting that the ELP’s “scope, cost, and schedule . . . will be further refined . . . periodically.” The agency does not know what physical upgrades it can or should implement to improve safety at these aging buildings: “further evaluations and physical upgrades will influence the priority of ELP tasks, which will require further refining of ELP implementation strategy.”²⁶ What is certain, however, is that NNSA will continue to use these buildings for at least 25 more years and will not bring these buildings into compliance with modern safety and seismic standards. Instead, it will require the public to accept the risk—a risk NNSA has not even seriously evaluated.

Requiring the public to accept the risks of ongoing use of these buildings because a safer decision is too expensive is not appropriate, especially in the absence of any additional NEPA analysis. Significant questions remain unanswered: Does this acceptance of risk refer only to workers? Does it also refer to the off-site public? Is the acceptance of risk consensual, or being imposed? These unresolved questions are consequential and they directly impact the public that NNSA has systematically excluded from its deliberations and decision-making processes for the last seven years despite repeated efforts by the public to engage NNSA on these and other issues. Moreover, any plan that relies on using the 9215 Complex and Building 9204-2E for decades to come must make worker and public safety the highest priority, not cost or schedule or mission need. If the buildings cannot be brought into compliance with modern safety standards, they should not be used.

²⁰ Consolidated Nuclear Security, LLC, *Extended Life Program Implementation Plan*, November 2016 at 1.

²¹ ELP Plan at 1.

²² ELP Plan at 2.

²³ 2001 SWEIS at 5-95

²⁴ ELP Plan at xii

²⁵ ELP Plan at 2.

²⁶ ELP Plan at xii.

Moreover, and ironically, although NNSA developed the ELP in an effort to save money, the ELP will be extremely costly—and still not achieve modern safety standards. As NNSA explains, “[d]ue to the backlog of maintenance in these facilities and the new expected lifetime, the funding strategy requires an additional commitment of funding above the current baseline.”²⁷ NNSA has never publicly disclosed the cost of the ELP; the 2018 SA merely characterizes the ELP as requiring “substantial investment.” 2018 SA at 9. However, documents produced in the administrative record in *OREPA v. Perry* indicate that the ELP program will cost at least several hundred million dollars. This expense is not encompassed within the \$6.5 billion cap for the UPF project, and indicates that the modernization of Y-12 will certainly cost substantially more than \$6.5 billion.

Similarly, although NNSA has never involved the public in any aspect of the planning for the Extended Life Program, administrative record documents from *OREPA v. Perry* reveal that the agency has undertaken an extensive series of activities to scope, analyze alternatives, and decide how to implement the ELP—all activities that should be undertaken through a NEPA process. Thus, in 2015, NNSA convened an “aging management workshop” in order “to determine what ‘good aging management practices’ were already in use and build off those ideas.” AR 20443. NNSA then convened “expert-based teams” to ask “[w]hat does it take to extend the life of Buildings 9204-2E and 9215 for at least 25 years, and possibly longer?” AR 20444. NNSA used these steps to create the ELP. At no time did NNSA publicly disclose these steps in any NEPA document, nor otherwise invite public comment or other public involvement.

Although one of the principal risks associated with the ongoing use of Building 9204-2E and the 9215 Complex is their vulnerability to earthquakes, the ELP does not include any definitive plans regarding how to upgrade these buildings to withstand an earthquake. The ELP invited a team of experts to make limited observations of these buildings and to recommend upgrades. However, these experts were not able to state that any possible upgrades would render these buildings safe.²⁸ Instead, the experts strongly recommended that the buildings undergo further evaluation according to modern, professional standards. NNSA has not completed any such evaluations. Again, despite the fact that it has begun exploring alternatives for upgrading these buildings, and intends to continue exploring such alternatives, it has refused to do so within the framework of any NEPA analysis.

In fact, *NNSA has never issued any NEPA document for any phase of the ELP*. NNSA’s 2016 SA mentions the term “extended life program” only once in passing. 2016 SA at 19. The 2018 SA acknowledges that the ELP “was established” “[i]n response to NNSA’s decision to reduce the scope of the UPF activities and continue certain EU operations in existing facilities,” 2018 SA at 17—and thus that the ELP could not have been considered in the 2011 SWEIS—but the 2018 SA does not take a hard look at the ELP under NEPA, and instead confirms that *NNSA does not intend to conduct any NEPA analysis for the ELP*. The 2018 SA also incoherently states that NEPA analysis of the ELP is “completed and continuing,” 2018 SA at 12, which is illogical on its face. What the 2018 SA makes clear is that the ELP’s “environmental evaluations” have been “primarily categorical exclusions.” In fact, during 2016 alone, NNSA

²⁷ ELP Plan at 2.

²⁸ ELP Plan at 11.

employed *67 categorical exclusions* to ELP activities. This pattern of relying on categorical exclusions reflects NNSA's refusal to consider the ELP in any coherent NEPA analysis.²⁹

NNSA's failure to prepare any NEPA analysis for the ELP is an egregious violation of NEPA. It is beyond any legitimate dispute that the ELP constitutes a new major federal action with significant environmental impacts. Indeed, because the ELP involves activities that could, in the event of an earthquake, result in uncontained, critical nuclear reactions with what the DNFSB characterizes as "potentially serious public consequences,"³⁰ the ELP is a matter of profound public interest. The purpose of NEPA is to require federal agencies to conduct a thorough analysis of impacts and alternatives with public input *before* an agency undertakes activities. Instead, NNSA is implementing the ELP without *any public input or NEPA analysis*.

The ELP is a major federal action taking place on federal property and costing hundreds of millions of dollars in federal money. It is also indisputably new. The term "extended life program" does not appear in the 2011 SWEIS. The 2018 SA acknowledges that the ELP "was established" "[i]n response to NNSA's decision to reduce the scope of the UPF activities and continue certain EU operations in existing facilities," 2018 SA at 17, and was thus created *after* the 2011 SWEIS. It is substantially different from the upgrade-in-place alternative, as described above. Indeed, as the ELP Implementation Plan states, "ELP is a new endeavor."³¹

It is also beyond dispute that the ELP may have significant environmental impacts. Although NNSA intends to implement some upgrades to Building 9204-2E and the 9215 Complex, it does not intend to bring the buildings up to modern safety standards, cannot say that they will withstand an earthquake, and cannot say that the enriched uranium activities located in these buildings will remain sub-critical if an earthquake does occur. Nor can NNSA say that a nuclear criticality accident will even be contained. Instead, as the DNFSB warned, if an earthquake causes structural collapse of Building 9204-2E or the 9215 Complex, the result could be an uncontained nuclear criticality accident, which could have "significant radiological consequences" including "serious public consequences."³²

Additionally, the ELP's commitment to the ongoing use of these buildings will require NNSA to maintain a larger highly secure perimeter than it proposed in 2011. This highly secure perimeter will likely act as an obstacle to the decommissioning, decontamination, and cleanup of excess facilities and other environmental contamination at Y-12 (which is extensive). The 2018 SA's attempt to cursorily dismiss this issue by asserting that the secure perimeter "would have no effect on [the] cleanup schedule," 2018 SA at 13, is highly implausible on its face and contradicts NNSA's other statements. For example, the 2018 SA acknowledges that "the presence of a secure perimeter makes it potentially more expensive . . . to complete [] cleanup operations." *Id.* Similarly, NNSA's 2011 SWEIS and ROD touted that the 90% reduction in the secure perimeter would make environmental cleanup more efficient—meaning that the retention of a larger secure perimeter associated with the ELP will make cleanup efforts more difficult and

²⁹ As explained further below, categorical exclusions may not be used to segment an agency action into individual parts and thereby avoid any meaningful NEPA analysis of the action as a whole. *See infra* at 28.

³⁰ DNFSB, *Confinement of Radioactive Materials at Defense Nuclear Facilities*, October 2004, at iii.

³¹ ELP Plan at xii

³² DNFSB, *Confinement of Radioactive Materials at Defense Nuclear Facilities*, October 2004, at iii.

less efficient. Consequently, both through the risk of uncontained nuclear criticality events and through the delay of environmental cleanup efforts, it is clear that the ELP may cause significant environmental impacts.³³

Considering the context and intensity of the ELP, there can be no legitimate doubt that an EIS is necessary. First, as to context, the ELP is an integral part of the modernization of the Y-12 Complex, an overall activity with profound importance to national security and with significant environmental impacts. The ELP will also take place over at least a quarter of a century, indicating that its temporal extent is significant as well.

Moreover, the ELP triggers several of the intensity criteria at 40 C.F.R. § 1508.27, any one of which is sufficient to require an EIS. First, the ELP “affects public health or safety,” *id.* § 1508.27(b)(2), because as the DNFSB stated it entails a risk of uncontained nuclear criticality accidents with significant public consequences. Second, the ELP has “highly uncertain or [] unique or unknown risks,” *id.* § 1508.27(b)(5), because NNSA has not even completed the necessary studies to evaluate what the agency even can do to make these buildings more resistant to an earthquake. For related reasons, the ELP is highly controversial, *id.* § 1508.27(b)(4); the DNFSB and NNSA have disagreed about the extent of risk associated with the ongoing use of these buildings and about the proper methodology for assessing this risk. The ELP is also significant because “it is reasonable to anticipate a cumulatively significant impact on the environment” when related actions, including the UPF and other Y-12 modernization activities, are taken into consideration. *Id.* § 1508.27(b)(7). The ELP also may adversely affect historic sites or endangered species, *id.* § 1508.27(b)(8), (b)(9), because numerous buildings at Y-12 are designated historic sites, and because the vicinity of Y-12 hosts some listed species, and an uncontained nuclear criticality accident could easily adversely affect both.³⁴ Accordingly, the intensity of the ELP amply demonstrates that an EIS is necessary.

The fact that NNSA has not yet completed studies of the seismic risks at Y-12 or what measures the agency can even take to make Building 9204-2E and the 9215 Complex safer provides yet another reason why an EIS is necessary. Again, an agency that “proposes to increase the risk of harm to the environment and then perform its studies,” or that has “implemented the first part of [the proposed action]” “has the process exactly backwards.” *National Parks*, 241 F.3d at 733. “[T]he ‘hard look’ must be taken before, not after, the environmentally-threatening actions are put into effect.” *Id.* An agency’s “lack of knowledge does not excuse the preparation of an EIS”; instead, the need to collect more information is “precisely why an EIS must be prepared.” *Id.*

³³ Indeed, the significance of these cleanup activities is difficult to overstate. As the DOE’s Inspector General has noted, Building 9201-5 (Alpha-5) at Y-12 is at the very top of the Excess High-Risk Facilities top ten list. In other words, it is the most dangerous facility in the nation-wide nuclear weapons complex. It poses, in the words of the DOE Inspector General, “an ever-increasing risk to workers and the public.” There exists now a serious risk to workers and the public, and it is getting worse. But in DOE’s entire \$5 billion-plus cleanup budget there is no funding for Alpha-5 cleanup. Other, lower-risk, shovel-ready cleanup activities are being prioritized because they are easier. The retention of a large security perimeter is likely to make this problem worse, with likely impacts on water resources as contamination remains in the ground longer and potentially spreads farther.

³⁴ The area of the Y-12 Complex includes habitat for the endangered gray bat (*Myotis grisescens*), the endangered Indiana bat (*Myotis sodalis*), and the threatened northern long-eared bat (*Myotis septentrionalis*).

Similarly, NNSA's reliance on vague assurances runs contrary to NEPA. For example, the 2018 SA states that "[i]t *may be possible* to upgrade" aging buildings. 2018 SA, at 19; *see also id.* at 20 ("a reduction in the Material at Risk limit *has the potential* to reduce the accident consequences"); *id.* ("NNSA *believes* that it can continue to operate...in a safe manner"); *id.* at 18 ("It *appears* that those risks and consequences are lower"). Contrary to NNSA's reliance on these vague assurances, "NEPA requires more" than an agency "ask[ing the public] to assume the adequacy and accuracy of partial data without providing any basis for doing so." *WildEarth Guardians, v. Montana Snowmobile Ass'n*, 790 F.3d 920, 927 (9th Cir. 2015). Those who work on the Y-12 site and those living in the region around it deserve certainty to the fullest extent possible, not vague reassurances. This is an especially glaring defect in light of the fact that NNSA blundered with the original design of the UPF by failing to make it big enough to fit all the necessary equipment, has systematically excluded the public from its re-design of all Y-12 modernization efforts, and continues to refuse to reveal its schedule or budget to the public.³⁵

NNSA's failure to conduct any NEPA analysis for the ELP has important practical consequences. First, this failure means that NNSA has not fully considered the environmental impacts of the continued use of the 9215 Complex and Building 9204-2E for the extended 25-year lifetimes of the facilities. Second, this failure means that the agency has not fully considered the risks of continuing to use these facilities for NNSA's own mission. For example, NNSA has no foreseeable recourse if seismic experts conclude that these buildings are not fit for use for the proposed extended lives; in that event, NNSA would find itself in the midst of construction of a facility that is inadequate to meet the agency's stated mission requirements and incapable of being modified to accommodate all EU operations. This is precisely the type of impasse that NEPA analysis is designed to avoid: "NEPA emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decisionmaking to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *WildEarth Guardians v. Montana Snowmobile Ass'n*, 790 F.3d 920, 927 (9th Cir. 2015).

Moreover, NNSA's refusal to conduct any NEPA analysis for the ELP violates the precept that NEPA analysis "shall serve as the means of assessing the environmental impact of proposed agency actions, *rather than justifying decisions already made.*" 40 C.F.R. § 1502.2(g) (emphasis added). NNSA's post hoc reasoning in its SAs are explicitly aimed at justifying the decisions that NNSA has already made, which is wholly inappropriate. Indeed, the ELP Implementation Plan makes clear that "analyses that substantiate the risk reductions that have already taken place . . . *are intended to justify decisions* to continue to operate these capabilities for the extended life."³⁶ This is a flagrant violation of NEPA.

³⁵ NNSA is also inappropriately predetermining the outcome of its consideration of seismic risks by using these studies as a justification of a decision already made. Without an even-handed consideration of these issues through a comprehensive NEPA process, NNSA could be heading for another half-billion dollar mistake at the UPF, while offering the public empty assurances.

³⁶ ELP Plan at 2 (emphasis added).

III. NNSA is unlawfully segmenting its analysis of its Y-12 modernization efforts in violation of NEPA.

All of the Y-12 modernization activities—including the construction of the UPF, the construction of the nearby Highly Enriched Uranium Materials Facility to store enriched uranium products, the Extended Life Program for Buildings 9204-2E and the 9215 Complex, the retention of a highly secure perimeter, and the eventual decommissioning, decontamination, and cleanup of excess facilities—are integral parts of NNSA’s Enriched Uranium Mission Transformation program.

NEPA requires that these activities be considered together in a single EIS because “the dependency [between them] is such that it would be irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken.” *Hirt*, 127 F. Supp. 2d at 842. Here, for example, NNSA’s construction of new buildings through the new UPF design “would be irrational, or at least unwise,” if the agency does not also extend the lives of Building 9204-2E and the 9215 Complex through the ELP, because those aging buildings will house activities that are essential to both the activities in the new buildings and the agency’s entire enriched uranium mission overall.³⁷ The same is true of the remaining activities at Y-12; all of these activities are part of NNSA’s overarching effort to modernize the badly antiquated Y-12 Complex. All of these interrelated activities must be considered together in a single NEPA document.

Instead, the agency has consistently failed to prepare any NEPA analysis for its shifting approach to modernizing Y-12, or, since 2011, to involve the public. NNSA did not engage in any NEPA process when it redesigned the UPF or when it created the ELP. Instead, *after NNSA made these decisions and began implementing them*, it prepared post-hoc Supplement Assessments wrongfully claiming that the fundamental re-design of the agency’s Y-12 modernization is not a substantial change from what was previously analyzed. NNSA thus has the NEPA process upside down. The purpose of NEPA is to compel agencies to take a hard look at environmental impacts and alternatives in a public process *before* the agency takes action. Indeed, the fact that NNSA has already begun to implement various aspects of the modernization of Y-12, including activity on the re-designed UPF and numerous activities in the ELP, contravenes NEPA’s intent to avoid any “irreversible and irretrievable commitments of resources” before an agency takes the hard look that NEPA requires. *See* 42 U.S.C. § 4332(C) (requiring analysis before the commitment of resources). NNSA’s contrary attempt to fundamentally re-design its modernization of Y-12 without taking the required hard look at the re-design, and instead to rely on a series of post-hoc Supplement Assessments and a whole host of categorical exclusions, is a clearcut violation of NEPA, especially because NNSA’s re-design is substantially less safe for workers and the public than the design it abandoned in 2014.

The 2018 SA cannot cure this egregious NEPA violation. Indeed, the 2018 SA only makes NNSA’s ongoing violation of NEPA even clearer by revealing a series of activities that the agency is failing to evaluate in any meaningful NEPA analysis. Thus, the 2018 SA notes “modernization projects that were not ripe for decision in 2011, but which have been implemented between 2011 and now,” apparently without *any* NEPA review. 2018 SA, at 6.

³⁷ ELP Plan, at 1 (“ELP includes only refurbishments and repairs to 9204 2E and 9215 Complex that support EU mission capabilities”).

Likewise, the SA discounts other future projects as “not ripe for analysis,” suggesting that NNSA may prepare NEPA documentation at some later date. 2018 SA at 16. However, NNSA’s failure to prepare any NEPA documentation for its re-design of the UPF or for the ELP indicates that NNSA has no intention of undertaking the clearly appropriate and legally required process of analyzing these activities together in an EIS. Indeed, the 2018 SA confirms that NNSA will not prepare any comprehensive EIS, but instead, “[s]tand-alone NEPA documents for future project[s] would be prepared as needed.” 2018 SA at S-1.

NNSA’s arbitrary segmentation of the analysis of its Y-12 modernization efforts has artificially divided this entire effort into numerous pieces, which have not had any legally sufficient NEPA analysis. First, the re-designed UPF is significantly different from the alternatives analyzed in the 2011 EIS in that all those alternatives involved construction of *one* new building, while the re-designed UPF involves *multiple* new buildings, received only post-hoc attention in the 2016 SA. Second, the ELP has never been the subject of any NEPA analysis, as discussed above, except the wholly post-hoc 2018 SA. (The ELP existed in 2016, yet the 2016 SA offered no real discussion of the ELP.) And now, the 2018 SA reveals several additional related actions that will not receive the comprehensive hard look in an EIS that NEPA requires.

As discussed in the accompanying memorandum from Robert Alvarez—who has extensive experience with the workings of NNSA and the Y-12 Complex, including service as a senior policy advisor to the Secretary of Energy and as a deputy assistant secretary for national security and the environment, *see* Attachment B at 1—“[t]here is no legitimate reason for this segmentation; instead, it is an expression of NNSA’s haste” regarding the UPF project and other Y-12 modernization activities, and reflects NNSA’s “attempt to artificially claim that it will be able to stay within [a \$6.5 billion] budget cap, when the full costs will be much greater.” *Id.* at 5 NNSA’s segmentation of its NEPA analysis also thwarts any public participation before NNSA makes its decisions and runs the significant risk of project failure because of the interdependent nature of the program’s elements, which is especially inappropriate because the modernization of Y-12 has already been plagued with serious problems.

NNSA’s reliance on numerous categorical exclusions is illustrative of its unlawful approach. Categorical exclusions are appropriate only when an agency has determined in advance that an action will not “individually *or cumulatively* have a significant effect on the human environment.” 40 C.F.R. § 1508.4 (emphasis added). Categorical exclusions are not appropriate if there are any “extraordinary circumstances,” which include “uncertain effects or effects involving unique or unknown risks.” 10 C.F.R. § 1021.410(b)(2). Moreover, DOE’s NEPA regulations recognize the danger that categorical exclusions may be used to inappropriately segment an action, acknowledging that “[s]egmentation can occur when a proposal is broken down into small parts to avoid the appearance of significance.” *Id.* § 1021.410(b)(3). For this reason, categorical exclusions are not appropriate if an action “is connected to other actions with potentially significant impacts” or with “cumulatively significant impacts.” *Id.*

As Mr. Alvarez describes, however, “NNSA has invoked an entire compendium of categorical exclusions for important aspects of its modernization of the Y-12 Complex in total

disregard of the critical limitations on the use of this type of document.” Attachment B, at 6. The fact that the ELP has relied on “primarily categorical exclusions” is a good example. 2018 SA, at 9. In fact, the ELP has invoked no less than **67 categorical exclusions** in 2016 alone. *Id.* As described above, the ELP is a major federal action with significant environmental impacts. Accordingly, NNSA’s reliance on “primarily categorical exclusions” for the ELP is a textbook example of segmentation; all of these actions are clearly connected, and rather than consider the ELP’s significant impacts, NNSA’s inappropriate reliance on categorical exclusions causes the ELP to be unlawfully “broken down into small parts to avoid the appearance of significance.” 10 C.F.R. § 1021.410(b)(3).

As Mr. Alvarez also notes, the 67 categorical exclusions for the ELP are not the only categorical exclusions on which NNSA is inappropriately relying. “Instead, the NNSA has wrongfully elected to rely on categorical exclusions for a large number of other activities at Y-12—all of which are properly viewed as integral parts of the agency’s modernization of this Complex.” Attachment B, at 6. Thus, NNSA is relying on categorical exclusions for a Calciner Project, a Canning Project, an Electrorefining Project, a new Fire Station facility; and new electrical systems. *Id.* As Mr. Alvarez explains, “[t]he use of these categorical exclusions is inappropriate, illogical, and unlawful because it arbitrarily segments activities that are, in fact, interrelated and indispensable aspects of NNSA’s modernization of the Y-12 Complex.” *Id.*

The Electrorefining Project is a particularly good example of how the inappropriate use of a categorical exclusion causes NNSA to avoid considering significant environmental risks. As Mr. Alvarez describes, electrorefining is “an experimental procedure with *no proven history of success*, even on a pilot scale,” and is “highly hazardous,” involving risks of nuclear criticality. *Id.* at 7. Indeed, even the developer of the electrorefining process called for additional research before it is deployed. *Id.* Accordingly, electrorefining clearly involves the “extraordinary circumstance” of “unique or unknown risks,” 10 C.F.R. § 1021.410(b), because, as Mr. Alvarez notes, “*electrorefining is an experimental and unproven technology.*” Attachment B, at 9. However, NNSA’s inappropriate use of a categorical exclusion for the electrorefining project means that “the amounts, hazards and disposition of this project’s wastes have not been specifically identified, disclosed to the public, or subjected to any environmental analysis.” *Id.* at 7.

The use of a categorical exclusion for the Electrorefining Project is especially inappropriate because that project will be located in the 9215 Complex, an aging facility with known structural deficiencies that make it vulnerable to earthquakes. As Mr. Alvarez notes, these aging facilities have “an extensive history of serious safety problems,” including at least 23 fires and explosions. *Id.* Additionally, as described above, the DNFSB has warned that in the event of an earthquake, the 9215 Complex could experience an uncontained nuclear criticality accident. The placement of a highly hazardous, experimental procedure in this aging, vulnerable facility obviously entails a serious risk—but the inappropriate use of a categorical exclusion for this project, and the fact that NNSA relies *primarily* on categorical exclusions for the entire ELP, mean that the agency has arbitrarily and capriciously failed to even consider this risk in any

NEPA process.³⁸ Nevertheless, the agency has already begun implementation of the electrorefining project.³⁹

As Mr. Alvarez further emphasizes, electrorefining is not “the only hazardous technology for which NNSA has relied on a categorical exclusion or otherwise arbitrarily avoided meaningful environmental review.” Attachment B, at 9. Instead, the same pattern of illogical and unlawful behavior applies to direct electrolytic reduction of uranium oxide; chip processing to convert uranium metal scraps into a reusable form; calciner technology; and microwave casting. As Mr. Alvarez summarizes, “[t]he inappropriate categorical exclusion for electrorefining, and the agency’s refusal to fully analyze other hazardous technologies, are illustrative of the agency’s entirely inadequate environmental review process.” *Id.* at 10.

Similarly, the NNSA’s plan to create a new Lithium Production Capability Project, 2018 SA at 12-13, and to analyze it only in an Environmental Assessment, offers another example of NNSA’s unlawful segmentation of its NEPA analysis. This project is clearly related to the other activities in the UPF and ELP; the 2018 SA states that “lithium is an essential element for the refurbishment and modernization of the nuclear weapons stockpile.” 2018 SA at 13. NNSA’s refusal to consider it in a holistic manner along with the re-designed UPF, the ELP, and other modernization activities is another example of unlawful segmentation. The Lithium Production Capability Project was not analyzed in the 2011 SWEIS, which is another reason that it must now be included in a new or revised EIS.

Likewise, NNSA has also announced still more projects for which it refuses to prepare any NEPA analysis, including a Mercury Treatment Facility and a new landfill. The Mercury Treatment Facility is “a new project to reduce mercury releases” to nearby waters and is “scheduled to be operational by 2024.” 2018 SA, at 15. Similarly, because DOE’s current landfill is nearly full, it is considering whether to construct and operate a new landfill. *Id.* at 51. However, for both of these projects, NNSA is refusing to prepare any NEPA analysis, because the agency believes that undertaking these activities as remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) exempts them from NEPA review. This is wrong. DOE’s remedial CERCLA actions are not exempt from NEPA. *NRDC v. Dep’t of Energy*, No. C-04-04448, 2007 WL 1302498, at *16 (N.D. Cal. May 2, 2007) (“DOE’s argument that the remediation is categorically excluded from the requirement to prepare an EIS by virtue of being a cleanup fails for several reasons,” including that “simply characterizing the remediation as a cleanup does not eliminate the potentially significant effects which cleanup procedures may have on the natural environment”).

NNSA’s refusal to engage in any NEPA process for its landfill project is especially arbitrary because the 2018 SA reflects a 5-fold increase in certain wastes and a doubling of other

³⁸ NNSA’s reliance on a categorical exclusion for the electrorefining project is also unlawful because this project constitutes a major modification of the 9215 Complex. NNSA Approval of CD-1/3A for ER Project, 9-3-2015, at 2. Similarly, this project is also a significant expenditure, costing at least \$50 million. *Id.* at 1. That NNSA is undertaking a costly major modification of the 9215 Complex is another reason that its refusal to prepare any NEPA documentation is improper.

³⁹ CNS Continued Safe Operating Oversight Team Annual Report, October 19, 2017, at 15 (noting that the project is nearly 25% complete).

wastes since the publication of the 2011 SWEIS. 2018 SA, at 42. It is unclear whether existing facilities can even handle such large volumes of waste. It is also possible that these increases in waste may require increased transportation, which may also have environmental impacts that NNSA has so far totally ignored. Such large increases in waste generation are clearly significant and offer another indication that preparation of a new or revised site-wide EIS is necessary. *See U.S. v. Detroit*, 329 F.3d at 530 (“an increase of less than 200% over the environmental impact considered in the original EIS requires NEPA analysis”).⁴⁰

In sum, as Mr. Alvarez describes, NNSA continues to engage in an unlawful segmentation of NEPA analysis that “wrongfully divides the scope of analysis into many piecemeal segments with ostensibly limited impacts, when all these activities are part of the NNSA’s ongoing efforts to modernize its Enriched Uranium Program—a program that without question has significant environmental impacts.” Attachment B, at 2. “The result is a segmented analysis that defies logic and law.” *Id.* at 10. The only appropriate course of action for NNSA at this juncture is to “prepare a new Environmental Impact Statement that comprehensively analyzes the entire modernization of the Y-12 Complex.” *Id.*

CONCLUSION

NNSA is engaged in a pattern of flagrant violations of NEPA and the 2018 SA does not remotely rectify these violations. The agency has abandoned the decision it made in 2011 and has instead fundamentally re-designed its modernization of the Y-12 Complex in a manner that is profoundly constrained by cost rather than animated by concerns about safety, security, or efficiency. However, the agency has also refused to prepare any additional NEPA documentation for this fundamental re-design and reorientation, and is instead continuing to implement decisions at which it has failed to take a hard look (or, for that matter, any look) as NEPA requires. Far from rectifying these NEPA violations, the 2018 SA is itself unlawful and arbitrary and capricious for failing to adequately consider new changes or information and for again concluding on legally and logically bankrupt grounds that no further NEPA analysis is necessary. Under these circumstances, NNSA must prepare a new or supplemental EIS.

Sincerely,

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⁴⁰ The 2018 SA fails to identify what wastes are hazardous or toxic and must be handled pursuant to RCRA or TSCA. These wastes may have especially problematic environmental impacts, and the consideration of these issues provides yet another reason why a new or revised EIS is legally required.