UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TENNESSEE

OAK RIDGE ENVIRONMENTAL PEACE ALLIANCE, NUCLEAR WATCH OF NEW MEXICO, NATURAL RESOURCES DEFENSE COUNCIL, RALPH HUTCHISON, ED SULLIVAN, JACK CARL HOEFER, and LINDA EWALD,	)	
Plaintiffs,	)	
	)	**No. 3:18-cv-00150**
v.	)	**REEVES/POPLIN**
JAMES RICHARD PERRY, Secretary, United States Department of Energy, and LISA E. GORDON-HAGERTY, Administrator, National Nuclear Security Administration,	)	
Defendants.	)	

PLAINTIFFS' MEMORANDUM IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

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GLOSSARY

APA	Administrative Procedure Act
AR	Administrative Record
CE	Categorical Exclusion
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
ELP	Extended Life Program
IG	Inspector General
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
OREPA	Oak Ridge Environmental Peace Alliance
SA	Supplement Analysis
SEIS	Supplemental Environmental Impact Statement
SWEIS	Site-Wide Environmental Impact Statement
UPF	Uranium Processing Facility
USGS	United States Geological Survey
Y-12	The Y-12 National Security Complex

INTRODUCTION

This case concerns the National Nuclear Security Administration's ("NNSA") and Department of Energy's ("DOE") violations of the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321–4370m, regarding plans for modernizing the Y-12 National Security Complex in Oak Ridge, Tennessee, where NNSA processes nuclear weapon components in facilities that are old, obsolete, and vulnerable to earthquakes. NNSA decided in 2011 to build a single new facility to replace its deteriorating buildings, but has abandoned that decision. NNSA now plans to rely on aging, vulnerable buildings for decades to come—but has decided it would be too expensive to upgrade these aging buildings into meet modern safety and environmental codes. NNSA's refusal to upgrade its buildings to meet modern codes exposes the public to the risk of facilities being damaged or even collapsing in an earthquake, potentially releasing radiological and toxic contaminants—a risk highlighted by recent local earthquakes.

NNSA prepared an Environmental Impact Statement ("EIS") for its 2011 decision, but the agency has refused repeated requests by Plaintiff Oak Ridge Environmental Peace Alliance ("OREPA") and others to prepare any similar analysis for its new plan. NNSA has also failed to prepare any NEPA analysis for crucial actions implementing its new decision, such as its plan to extend the lives of certain aging buildings without bringing them into compliance with modern safety codes. These failures violate the letter and purpose of NEPA and implementing regulations, and thus run afoul of the Administrative Procedure Act ("APA"), 5 U.S.C. § 706(2).

BACKGROUND

I. THE NATIONAL ENVIRONMENTAL POLICY ACT.

NEPA is "our basic national charter for protection of the environment," and "one of our most important tools for ensuring that all federal agencies take a 'hard look' at the environmental

implications of their actions or non-actions." *Southwest Williamson Cty. Cmty. Ass'n. v. Slater*, 243 F.3d 270, 274 n.3, 278 (6th Cir. 2001). Implementing regulations from the Council on Environmental Quality ("CEQ") are "binding on all federal agencies." 40 C.F.R. § 1500.3.

"NEPA has twin aims," with "action-forcing procedures" that place "upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action" and ensure "that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). NEPA mandates that "agencies shall to the fullest extent possible . . . [e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment." 40 C.F.R. § 1500.2(d). Federal agencies must prepare an EIS for any "major federal actions significantly affecting the quality of the human environment." *Slater*, 243 F.3d at 274 n.3 (citing 42 U.S.C. § 4332(2)(C)). Agencies "may first choose to prepare an environmental assessment or 'EA,' a preliminary document which 'briefly provides sufficient evidence and analysis for determining whether to prepare an [EIS] or a finding of no significant impact." *Id.* (quoting 40 C.F.R. § 1508.9). To determine whether impacts are significant, agencies must consider a project's "context" and "intensity," which is evaluated according to ten factors, 40 C.F.R. § 1508.27, any one of which may necessitate an EIS. *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 865 (9th Cir. 2005). Because NEPA requires agencies to examine the impacts of the entirety of a proposed action, including indirect and cumulative effects, agencies may not "segment" an action into smaller parts to avoid the hard look NEPA requires. *See Tenn. Envt'l Council v. Tenn. Valley Auth.*, 32 F. Supp. 3d 876, 890 (E.D. Tenn. 2014).

Under narrow circumstances, agencies may invoke a Categorical Exclusion ("CE") to exempt from NEPA review "a category of actions which do not individually or cumulatively

have a significant effect on the human environment and which have been found to have no such effect" through an agency's NEPA procedures. 40 C.F.R. § 1508.4. "[I]n order to comply with NEPA, the agency must determine whether a CE applies and whether an 'extraordinary circumstance' exists that precludes the use of a CE," and must comply with its own regulations. *Sierra Club v. U.S. Forest Serv.*, 828 F.3d 402, 411 (6th Cir. 2016) (quoting 40 C.F.R. § 1508.4).

The analysis of alternatives "is the heart" of the NEPA process. 40 C.F.R. § 1502.14. Agencies must "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.* 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).

Under certain circumstances, NEPA requires agencies to take a renewed hard look even "after a proposal has received initial approval." *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989). Where "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts," an agency must prepare a Supplemental EIS ("SEIS"). 40 C.F.R. § 1502.9(c)(1)(ii); 10 C.F.R. § 1021.314(a). "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.* "When it is unclear whether or not an [SEIS] is required," DOE's own regulations provide for preparation of a Supplement Analysis ("SA"). 10 C.F.R. §1021.314(c). An SA "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.*

Courts review NEPA challenges pursuant to the APA, under which a decision is "arbitrary and capricious . . . if the agency has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Sierra Club*, 828 F.3d at 407.

II. FACTUAL BACKGROUND

A. The Y-12 National Security Complex.

The Y-12 National Security Complex, located near Knoxville, Tennessee, is the nation's "primary site for enriched uranium [] processing and storage," and "the only source" for key parts of nuclear weapons. Administrative Record ("AR") at 17730. Construction of Y-12 began "in 1943 as part of the World War II Manhattan Project," *id.*, with most buildings "constructed prior to 1950." AR17738. Currently, as NNSA explained, "[m]ost of the facilities" at Y-12's "sprawling industrial complex" are "old, oversized, and inefficient," including many that "are costly to maintain and have no inherent value for future missions." AR17738–39. Even "Y-12's core manufacturing and processing operations are housed in decades-old buildings that are near or past the end of their expected life spans." AR26611. "More than 60% of the Y-12 mission-critical facilities are over 70 years old," while another 29% are 40 to 69 years old. *Id*. These buildings "predate[] many of the modern safety standards applicable to nuclear facilities," AR26290, and "do not meet current codes and standards related to natural phenomena [] events (e.g., tornados and earthquakes)." AR16948.

The Y-12 site is highly contaminated, with cleanup projected to cost at least $8.7 billion. AR27075. As DOE has found, "extensive contamination of facilities and the environment" affects "soil, surface water, sediment, and groundwater." AR27078–79. For example, "[o]ver 2 million pounds" of mercury have been "spilled, lost, or unaccounted for," with roughly "700,000 pounds [] lost to the environment." AR29819. "Abundant rainfall in the region, coupled with shallow groundwater, carries contaminants to local waterways, resulting in potential health and environmental risks." AR27086. Indeed, from 2012 to 2016, Y-12 released over 1,200 pounds of uranium into a nearby creek. *See* AR26676. Similarly, "offsite migration" of mercury has led to "continued high levels as measured in local fish populations" that "exceed regulatory limits," AR27079, and "[f]uture demolition of former mercury-use buildings and remediation of underlying soils could lead to increased mercury releases." AR28924.

Deteriorating facilities at Y-12 themselves present grave environmental risks. According to DOE's Inspector General ("IG"), such facilities "pose increasing risks to mission, workers, the public, and the environment," and delays in their cleanup "expose the Department, its employees and the public to ever-increasing levels of risk." AR19107.[1]

Earthquakes are a major hazard that could jeopardize both public health and safety and Y-12's mission. "The eastern Tennessee seismic zone [] is the second-most active seismic zone in the eastern United States." AR31670. The Defense Nuclear Facilities Safety Board ("DNFSB"), a federal agency that monitors "DOE's efforts to address the safety vulnerabilities of aging defense nuclear facilities at Y-12," has expressed "particular concern" about "the vulnerability of certain enriched uranium production facilities to damage in an earthquake."

[1] Even NNSA's own contractor found that aging facilities pose "significant risks to people, the environment, and the NNSA mission." AR26975. Because NNSA relies on contractors for its Y-12 modernization plan, this brief on occasion refers to the contractors' statements as NNSA's.

AR26202. Indeed, the DNFSB warned that "known structural deficiencies" in Y-12 facilities "result in an increased potential for structural collapse and release of radiological material following certain seismic events." AR19127.

B. NNSA's 2011 Decision to Modernize Y-12.

In 2011 NNSA decided it was essential to modernize Y-12. Because "[c]ontinued long-range reliance on World War II-era facilities . . . would not provide the level of security and safeguards required for the future," NNSA's stated "purpose and need" for its "decision regarding the modernization of Y-12" was, among other things, to "[r]eplace/upgrade end of life facilities and ensure a reliable [enriched uranium] processing capability" and to "[c]omply with modern building codes and environment, safety, and health [] standards." AR16875–76.

Accordingly, NNSA prepared a "Site Wide Environmental Impact Statement" ("SWEIS") analyzing five alternatives for Y-12 modernization: no action; "upgrading the existing facilities to attain the highest level of safety, security and efficiency possible without constructing new facilities," AR16876; and three alternatives involving "a new, fully modernized manufacturing facility" called the Uranium Processing Facility ("UPF"). *Id*. NNSA decided in 2011 to build a "Capability-sized UPF," a single facility that would "replace multiple aging facilities." AR17910. NNSA found that "[r]eplacing older, inefficient facilities with new facilities that incorporate modern safety, security and efficiency standards, would improve Y-12's ability to protect human health and the environment." AR17909.

C. Increased Cost Leads NNSA to Radically Change Course.

NNSA's plan for a single new UPF soon encountered rapidly spiraling costs, as revealed in an audit by the Government Accountability Office. AR18019. Because NNSA based its initial

estimates on "overly optimistic assumptions," AR18025, by 2012, the projected cost of the UPF rose from $1.1 billion to $6.5 billion, and even as high as $11.6 billion. AR18022, AR18038.

"In June 2012 . . . the Deputy Secretary of Energy approved [a] reduced-scope UPF at a cost range of $4.2 to $6.5 billion." AR18040. To keep costs below $6.5 billion, NNSA decided the UPF would no longer "consolidate all uranium operations," AR18030, but only operations from "the highest hazard nuclear facility at Y-12." AR19128. This "change in the UPF project strategy in 2012 . . . resulted in delaying the transition of Building 9215 and 9204-2E." AR26360. Building 9204-2E provides for "assembly and disassembly of nuclear weapon stockpile components," AR29954, and the 9215 Complex provides for "storage and handling" and fabrication of enriched uranium "for maintenance of nuclear weapon stockpiles." AR29955. Thus, the new, smaller UPF required NNSA to continue critical operations in two deteriorating facilities at least through 2040, and likely until 2050. AR29951. This decision was not published in the Federal Register, nor was the public involved in a NEPA process or any other manner.[2]

To support its decision, in 2014, NNSA convened a "Committee to Recommend Alternatives to the Uranium Processing Facility Plan," known as the "Red Team." AR18119. This Red Team included NNSA staff, private contractors, and members of the British Atomic Weapons Establishment. AR18155. However, the Red Team did not include any member of the affected public, did not take any public comment, and did not make its findings publicly available. ECF No. 8, ¶ 57. To remain "within the funding constraints," the Red Team endorsed NNSA's plan for a vastly reduced UPF and ongoing reliance on aging buildings. AR18147.

[2] "The 9215 Complex consists of Building 9215, Building 9998, Building 9215A, Building 9811-2, Building 9996, and A-2 Wing of Building 9212." AR 29955. While NNSA documents occasionally refer to "Building 9215" and "the 9215 Complex" interchangeably, this brief uses the latter because NNSA intends to continue using the Complex rather than the single building.

When OREPA learned of the Red Team, it requested that DOE prepare a new EIS for this major change with significant environmental implications, because an EIS should be prepared "early in the decision-making process." AR18357–58. DOE and NNSA never responded.

NNSA did not formally amend its 2011 decision to build a single new UPF facility until an "Amended Record of Decision" in July 2016 announced that NNSA would instead build a UPF consisting of multiple buildings and "perform necessary maintenance and upgrades to some existing [enriched uranium] facilities." AR20708. NNSA described this decision as a "hybrid approach that combines elements of the Upgrade in-Place Alternative and the Capability-sized UPF Alternative" from the 2011 SWEIS. *Id.* Yet, while the 2011 SWEIS's purpose and need included "[c]omply[ing] with modern building codes and environment, safety, and health [] standards," AR16875–76, the 2016 decision was "*not to bring the long-range Y-12 [enriched uranium] facilities to current seismic standards*" because "it would be prohibitively expensive." AR20632 (emphasis added). And despite the DNFSB reporting to Congress that the new decision constitutes "significant changes to the UPF project," AR19214, NNSA publicly declared that "NNSA's revised strategy is not a substantial change to the proposals covered by the [2011] Y-12 SWEIS," and that "no further NEPA documentation is required." AR20709.

D. NNSA Develops the Extended Life Program Before Issuing its Amended Record Of Decision and Without Public Participation.

Because NNSA's "significant changes to the UPF project," AR19214, pressed Building 9204-2E and the 9215 Complex into continued service for decades, AR29951, "an alternate strategy for maintaining these [aging facilities'] capabilities became necessary." AR30055. NNSA therefore began to develop an "Extended Life Program" ("ELP") for Building 9204-2E and the 9215 Complex "through workshops in February 2015 and November 2015," AR30055, more than six months *before* issuing its Amended Record of Decision. Although NNSA

characterizes the ELP as providing "a forum for key stakeholders to come to agreement on the strategy to reduce, mitigate, and *accept the nuclear safety risk* associated with long-term operation of these facilities," AR29951 (emphasis added), NNSA did not provide public notice of the ELP, did not solicit or accept public comments, and held no public hearings. AR31277.

Building 9204-2E and the 9215 Complex have significant safety drawbacks. They were constructed "before the evolution of modern nuclear standards," AR26944, and have "myriad degraded conditions," AR29953, associated with both "infrastructure and programmatic equipment." AR26290. The facilities "involve both radiological and toxic materials and various standard industrial hazards [] and environmental concerns." AR29954–56. For example, "numerous deficiencies in the buildings" of the 9215 Complex mean that "some of the building structures could have a progressive collapse" in an earthquake. AR20497. "Almost immediately" after Building 9204-2E's construction in 1970, "exterior walls showed signs of movement and bowing." AR27179. One wall "is obviously moving in and out with the seasons." *Id.*

According to NNSA's own Implementation Plan for the ELP, these unsafe conditions exist due to NNSA's "run-to-failure approach" that did not properly maintain the aging buildings. AR30105. While prior "facility risk reviews" identified "investments required to continue safe operations" in these facilities, NNSA did not move "these actions forward in a timely fashion as neither Building 9204-2E nor 9215 was considered 'as bad'" as other facilities. AR20442. This "deferral of needed maintenance," AR30105, has led to the "normalization of abnormal conditions" as the agency has ignored progressively more serious issues such as "lagging, rusting, leaks, etc." AR27158. Overall, NNSA's prior "level of maintenance has little to no basis against industry norms for maintaining facilities and has not provided the foundation for the comprehensive sustainment of these facilities now required." AR 27154.

As a result, as the DNFSB has warned, continued use of Building 9204-2E and the 9215 Complex poses serious risks to the environment and the public as well as NNSA's mission. Because "Building 9204-2E and the 9215 Complex have known structural performance deficiencies and do not meet modern structural design requirements," they show "an increased potential for structural collapse and release of radiological material following certain seismic events." AR19127. Further, "[c]riticality safety evaluations for both Building 9204-2E and 9215 Complex processes" demonstrate that an earthquake could lead to an uncontrolled nuclear reaction in either building. AR26301.[3] Moreover, the facilities lack "active confinement ventilation systems," so that an earthquake causing a nuclear reaction would likely not be contained before public exposure to radiation. AR26301–03.

Nevertheless, while NNSA has determined that the buildings covered by the ELP "*pose an exceptionally high risk to occupants or the public at large*," AR20494 (emphasis added), the "premise of ELP is that some risk acceptance will occur in lieu of spending," with NNSA selecting activities that "generate[] risk reduction for modest or minimal investment." AR26062; *see also* AR27141 (explaining that the ELP "Safety Strategy" entails "[r]eevaluating the gaps between (a) the existing configuration of facilities and (b) modern nuclear safety and facility design requirements," and "[a]ddressing identified gaps by *either* (a) identifying and implementing practical upgrades . . . *or (b) formally accepting risk*") (emphases added).

The ELP's approach of "risk acceptance" in lieu of safety measures that NNSA deems too expensive applies to earthquakes, nuclear criticality, and confinement of contamination, among other serious issues. As to earthquakes, the ELP simply entails "mak[ing] a determination on whether practical upgrades are recommended" at an undisclosed time in the future. AR30071.

[3] "Criticality" is "a chain reaction" in nuclear material. AR 17254.

Similarly, as for containment in the event of a nuclear accident, NNSA merely anticipates a future "discussion of any significant confinement deficiencies and risks." AR29969. In short, NNSA created the ELP premised on accepting ongoing risks to the agency's mission, the environment, and public safety, but has set forth no meaningful criteria for determining when admitted risks are too costly to correct. Nor has the agency solicited any public comment or involved the public any way in the decision to accept these risks.

E. NNSA Receives Important New Information But Summarily Rejects Plaintiffs' Petition for Further NEPA Analysis.

1. Updated Seismic Hazard Maps

In 2014, the United States Geological Survey ("USGS") published seismic hazard maps that reflect improvements in seismic risk modeling since the prior release of such maps in 2008. The 2014 USGS seismic hazard maps are "updated to account for new methods, models, and data," AR28673, including "many new earthquake sources and ground motion models." AR28675. These maps aim to inform "governmental disaster management and mitigation applications . . . and many site-specific engineering analyses by industries and governments (such as those applied by the U.S. Department of Defense . . .)." AR28673. Importantly, the 2014 seismic hazard maps include "a new seismic source model" from the "Central and Eastern United States Seismic Source Characterization for Nuclear Facilities." AR28674. The 2014 seismic hazard maps show that Y-12 faces a significantly greater risk of a large earthquake than the USGS believed in 2008. *See* AR28678 (USGS map); *see also* AR 31650 (independent seismologist explaining that the 2014 estimate was "more than double the earlier estimate").

2. DNFSB Evaluations of Aging Y-12 Facilities

In 2015, the DNFSB warned NNSA that, based on the Board's "Structural Evaluations of the 9215 Complex and Building 9204 2E," these facilities' "known structural performance

deficiencies" lead to "an increased potential for structural collapse and release of radiological material following certain seismic events." AR19127. The DNFSB detailed numerous problems, such as the fact that the facilities "do not include the ductile design concepts that are used in modern design, and thus lack seismic margins to collapse." AR19129. The DNFSB warned that "under a site-specific earthquake of approximately 0.12g peak ground acceleration . . . progressive collapse of the structure is likely, damaging or destroying many if not all areas of the structure as a result." AR19130. Complying with modern codes would require extensive upgrades, such as "replacing a large number of brace members." AR19131.

The DNFSB also criticized NNSA's evaluation of seismic risks, because "evaluations for the 9215 Complex and Building 9204-2E are both using . . . an inappropriate level of hazard reduction." AR19134. The DNFSB noted that such hazard reduction is available only for facilities "*that are 'close to meeting criteria'*" in DOE regulations, which these facilities are not. AR19133–34 (emphasis added). While NNSA previously "accepted" this analysis "based on the then-expected limited remaining operational life of these facilities," the DNFSB warned that this approach was not appropriate given NNSA's decision to extend these facilities' lives. AR19134.

3. DOE Inspector General Report on High-Risk Excess Facilities

In 2015, DOE's IG issued a report titled "The Department of Energy's Management of High-Risk Excess Facilities." AR19105. The IG explained that dilapidated, abandoned DOE facilities "pose increasing risks to mission, workers, the public and the environment." AR19107. The IG noted that NNSA described one Y-12 facility as "[t]he worst of the worst," AR19112, and warned that facilities are "located in areas where there is a realized risk of natural disasters," such as Y-12, and that these facilities "expose the Department, its employees and the public to ever-increasing levels of risk," including the "likelihood of a contaminant release." AR19119.

F. NNSA's Backward-Looking 2016 Supplement Analysis And Public Demands for Further NEPA Review.

1. NNSA's 2016 Supplement Analysis

In 2016, years after deciding to reduce the scope of the UPF, NNSA prepared an SA for that decision. The SA concluded that there was no need for a new or supplemental EIS, but did not involve the public in that determination in any manner. ECF No 8, ¶¶ 79-80.

The 2016 SA did not consider numerous important issues. For example, while admitting that the USGS's 2014 seismic hazard maps provided "different" information "based on the possibility of earthquakes in eastern Tennessee that have a magnitude greater than 6," the 2016 SA did not analyze how this new seismic information bore on the agency's decision to continue to rely on aging buildings that are far more vulnerable to earthquakes than new buildings. *Id.*[4]

2. Plaintiffs' Petition for Further NEPA Review

In October 2016, Plaintiffs OREPA and Nuclear Watch petitioned DOE to prepare a new EIS for its new Y-12 modernization strategy. AR26042. The petition argued that because the agency would no longer bring facilities into compliance with modern codes, "[t]he public has a right to be fully informed of the risks being imposed on us, especially since the NNSA has declined to provide any opportunities for public engagement." AR26042–43. It described new information from the USGS, DNFSB, and the DOE IG, and requested that an EIS analyze the risks and impacts of relying on buildings with serious structural problems. AR26043–44. Finally,

[4] Similarly, the 2016 SA did not discuss the DNFSB report on structural problems in Building 9204-2E and the 9215 Complex, did not address whether the agency would undertake the rigorous analysis the DNFSB called for, and did not even include this report in its references. *See* AR20655–58. Nor did the 2016 SA address the DOE IG's report on high-risk excess facilities, evaluate whether the agency's new decision would impair the efficient cleanup of contaminated facilities, or include the DOE IG report in its references. *See id.*

the petition noted that despite NEPA "plac[ing] a high value on public participation," NNSA "has assiduously excluded the public" from its re-design of Y-12 modernization efforts:

> The entire Red Team process, the development of [a highly enriched uranium] implementation plan, the revisiting of the 2011 SWEIS, the preparation of the Supplement Analysis, and the publication of the Amended Record of Decision were conducted entirely without public involvement of any kind, despite repeated efforts of the public to engage DOE and NNSA.

AR26046. The petition urged NNSA to correct this failure by preparing a new EIS. *Id*.

In December 2016, NNSA responded to the petition in a one-paragraph letter. Without addressing any new information presented by Plaintiffs or responding to their concerns regarding public involvement, NNSA simply asserted that it "is in full compliance" with NEPA. AR26159.

G. Plaintiffs' Filing of this Lawsuit and NNSA's 2018 Supplement Analysis.

After receiving NNSA's conclusory response to their petition, OREPA and Nuclear Watch, along with the Natural Resources Defense Council and four individuals who live in the vicinity of Y-12, filed this lawsuit. After documents in the administrative record (which has since been supplemented) divulged the nature and extent of NNSA's new Extended Life Program, Plaintiffs informed Defendants of their intention to amend the Complaint to include a claim that DOE and NNSA are also violating NEPA by implementing the ELP without any NEPA analysis. Defendants then informed Plaintiffs that NNSA planned to prepare *another* Supplement Analysis addressing the need for further NEPA review in light of the issues raised by Plaintiffs. AR31260.

In May 2018, NNSA released a draft Supplement Analysis, AR30976, which *again* asserted that "no further NEPA documentation is required." AR31035. As to the ELP, the draft SA pointed to no EIS or any other NEPA document that addressed the impacts of, or alternatives to, that new program. Instead, the draft SA asserted that the ELP is ostensibly satisfying NEPA through "primarily *categorical exclusions*" from NEPA analysis. AR30991 (emphasis added).

Plaintiffs submitted detailed comments on the draft 2018 SA, AR31255, including input from Dr. David Jackson, a seismologist with decades of highly relevant expertise, AR31649, and from Robert Alvarez, a former DOE deputy assistant secretary for national security and the environment. AR31659. Plaintiffs' comments explained that not only did the SA fail to "rectify the violations previously pinpointed" by Plaintiffs, but also "is arbitrary and capricious in its own right," both due to unlawful reliance on categorical exclusions, and because NNSA "identifie[d] a whole host of actions that have never been subjected to any NEPA analysis." AR31261. Thus, Mr. Alvarez explained that "NNSA has invoked an entire compendium of categorical exclusion 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." AR31664; *see also* AR 31668 (explaining that reliance on such exclusions resulted in "a segmented analysis that defies logic and the law").

Notwithstanding such objections, NNSA finalized its new SA in August 2018 and, in doing so, yet again relied heavily on categorical exclusions to conclude that "no further NEPA documentation is required." AR31122. Plaintiffs challenged that conclusion, as well as Defendants' refusal to prepare *any* NEPA document on the Extended Life Program, in an Amended/Supplemental Complaint. ECF No. 47.

Underscoring Plaintiffs' concerns, beginning in December 2018, eastern Tennessee has experienced a series of earthquakes ranging from magnitude 1.3 to 4.4, many of which were clustered in the vicinity of Y-12 and Knoxville.[5] NNSA has not publicly released any information regarding these earthquakes or their impacts.

[5] The USGS provides earthquake information online. *E.g.*, https://earthquake.usgs.gov/earthquakes/eventpage/se60247871/executive (describing a magnitude 4.4 earthquake in eastern Tennessee on December 12, 2018). Courts may take judicial notice of government websites. *See Demis v. Sniezek*, 558 F.3d 508, 513 n. 2 (6th Cir. 2009) (taking notice of a government website).

ARGUMENT[6]

I. NNSA'S FAILURE TO PREPARE AN EIS OR EVEN AN EA REGARDING THE ELP VIOLATES NEPA AND IS ARBITRARY AND CAPRICIOUS.

A. Because the ELP Is a Major Federal Action That Significantly Affects The Environment, An EIS Is Required.

NNSA's refusal to prepare an EIS on the ELP contravenes NEPA, which mandates an EIS on all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). NEPA's implementing regulations define "Federal actions" broadly, to include the "[a]doption of ***programs***, such as a group of actions to implement a specific policy or plan; *systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive*." 40 C.F.R. § 1508.18(b)(3) (emphases added). The Extended Life Program is a classic example of such a "program" with significant impacts that require analysis in an EIS. Yet Defendants have subjected the ELP to no NEPA analysis whatsoever. This blatant violation of NEPA itself warrants summary judgment for Plaintiffs.

Indeed, on this record, there can be no legitimate dispute that the ELP requires an EIS. NEPA regulations require an EIS if any one of ten "intensity" factors show that a project may have significant impacts. 40 C.F.R. § 1508.27; *Ocean Advocates*, 402 F.3d at 865; *Humane Soc'y of the U.S.* v. *Johanns*, 520 F. Supp. 2d 8, 20 (D.D.C. 2007). To prove an EIS is needed, a plaintiff must only show "substantial questions whether a project may have a significant effect." *Blue Mountains Biodiversity Proj. v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998); *Ky. Coal Ass'n v. Tenn. Valley Auth.*, 804 F.3d 799, 804 (6th Cir. 2015) (If an "action will (or may) have a significant impact on the environment, the agency must prepare an [EIS]"); *Partners in Forestry*

[6] Plaintiffs' standing, which has not heretofore been challenged by Defendants, is established through facts in the attached declarations. *See* Exhibits A through D.

Co-op, Northwood Alliance v. U.S. Forest Serv., 638 F. App'x 456, 461 (6th Cir. 2015) (If "further study is required, the agency must prepare an EIS.").

Here, numerous intensity factors *at least* demonstrate substantial questions as to whether the ELP may have a significant environmental impact. For example, the ELP "affects public health or safety," 40 C.F.R. § 1508.27(b)(2), as NNSA has recognized. Indeed, NNSA has found that these facilities "pose an exceptionally high risk to occupants or the public at large." AR20494. And while the ELP's "strategy for protecting workers and the public from [natural phenomena hazards] associated with" the deteriorating facilities "is predicated on preventing a significant release of radiological material and toxicological material," AR29963, the agency cannot show that operations in these facilities will remain subcritical (i.e. under control) in the event of an earthquake or that any resulting radiological or toxicological contamination will actually be contained. AR26301–03; *see also supra* at 10 (discussing these facts in greater detail). Thus, the ELP at least *may* have significant impacts on public health or safety.[7]

Similarly, the ELP's impacts are "highly uncertain or involve unique or unknown risks." 40 C.F.R. § 1508.27(b)(5). "Preparation of an EIS is mandated where uncertainty may be resolved by further collection of data," because "[l]ack of knowledge does not excuse the preparation of an EIS; rather it requires the agency to do the necessary work to obtain it." *Anglers of the Au Sable v. U.S. Forest Serv.*, 565 F. Supp. 2d 812, 829 (E.D. Mich. 2008). Here, as described above, NNSA does not know the scope of seismic risks. AR31086 ("NNSA acknowledges that the documented safety basis reports for the existing Y-12 facilities will need to be updated to reflect updated seismic hazard information"). NNSA does not know whether the

[7] By NNSA's own logic, an earthquake rendering these essential facilities inoperable would significantly impact national security and thus public safety. AR16866 ("The primary purpose of continuing to operate Y-12 is to provide support for NNSA's national security missions.").

ELP will prevent criticality accidents. AR29960 (future "evaluations may not be able to demonstrate subcriticality"). It does not know whether contamination would be confined after an earthquake. AR29969 (noting the need for future "discussion of any significant confinement deficiencies and risks"). And NNSA does not know what seismic upgrades it will—or even can—make to these facilities. AR31146 ("seismic upgrades may be proposed"). The best NNSA can say is that it is "continuing to evaluate the effects of updated seismic information." *Id.* However, where an agency's analysis "indicates that further study is required, the agency must prepare an EIS." *Northwood*, 638 F. App'x at 461.

The ELP's effects are also "highly controversial," 40 C.F.R. § 1508.27(b)(4)—another "significance" factor—because "a substantial dispute exists as to the size, nature or effect of the major federal action." *Northwood*, 638 F. App'x at 463. "A substantial dispute exists when evidence . . . casts serious doubt upon the reasonableness of the agency's conclusions . . . generally challeng[ing] the scope of the scientific analysis, the methodology used, or the data presented by the agency." *Au Sable*, 565 F. Supp. 2d at 828. Here, as discussed in detail below, Plaintiffs submitted comments from an undisputed expert seismologist, disputing NNSA's methodologies for evaluating seismic risks for existing facilities, thus demonstrating a scientific controversy over the ELP. AR31649–53. (NNSA's response to comments is discussed below.)

Finally, the ELP "is considered a pilot effort" for aging facilities, AR20456, such that it "may establish a precedent for future actions with significant effects." 40 C.F.R. § 1508.27(b)(6).

Accordingly, because the ELP may have significant impacts based on numerous intensity factors—any one of which is sufficient to necessitate an EIS—the NNSA has acted in an arbitrary and capricious manner by refusing to prepare an EIS for the ELP. At a bare minimum, NNSA has violated NEPA by failing even to prepare an EA for the ELP. *City of Detroit*, 329

F.3d at 529 (Moore, J., concurring) ("The NEPA regulations' default rule is that federal actions, unless shown to be to the contrary, require preparation of an EA."). Because NNSA prepared neither an EIS nor even an EA, the public has been deprived of a forthright account of the ELP's environmental impacts—including risks that NNSA is now insisting that the public "accept" because the agency deems them too costly to correct—exploration of reasonable alternatives to the ELP, and any ability to participate in the agency's decision-making process.[8]

B. NNSA's Use of Categorical Exclusions In Lieu of Preparing an EIS for the ELP Flies In The Face of NEPA's Purposes And Flouts Binding Regulations.

Instead of considering the entire ELP's impacts as a whole, NNSA is relying on numerous categorical exclusions to address the program in piecemeal fashion and thereby avoid the comprehensive "hard look," informed by public input, that NEPA mandates. As explained, NNSA "applied primarily categorical exclusions" to ELP constituent actions, AR31076, and, indeed, in 2016 alone, invoked "approximately 67" such exclusions for various aspects of the ELP. *Id.* This extensive reliance on myriad CEs, which entails no public involvement whatsoever, as a means of avoiding more meaningful analysis, is antithetical to NEPA's purpose and also contravenes the plain terms of the regulations implementing NEPA.

[8] Highlighting NNSA's arbitrary and capricious behavior, the agency has prepared EAs for similar Y-12 modernization projects. For example, in September 2015 NNSA prepared an EA for an "Emergency Operations Center Project." AR19731. Even though "three of the[] alternatives [in the 2011 SWEIS] included construction of a facility similar to the Proposed [Emergency Operations Center]," NNSA prepared an EA, tiered to the 2011 SWEIS, AR19747, reasoning that because the new "project scope was different than the original" proposal, "[t]he EA for this new scope project made sense." AR19857. NNSA has made no effort to reconcile its contrary positions that on the one hand a change in the scope of the Emergency Operations Center Project required an EA, while on the other hand the agency refuses to prepare any EIS or even an EA for the ELP despite that project scope having changed significantly from any alternative in the 2011 SWEIS. *See*, *e.g.*, AR26060 (the ELP's "scope as described has morphed over the [first] year of developing ELP").

1. NNSA has unlawfully failed to consider segmentation in violation of its own NEPA regulations.

A fundamental requirement of NEPA is that an action's significance "cannot be avoided . . . by breaking it down into small component parts." 40 C.F.R. § 1508.27(b)(7); *see also id.* (agencies must consider "whether the action is related to other actions with individually insignificant but *cumulatively significant impacts*" (emphasis added)). DOE's own regulations recognize this crucial principle, and specifically apply it to CE determinations, mandating that "[t]o find that a proposal is categorically excluded, DOE *shall* determine" that "[t]he proposal *has not been segmented to meet the definition of a categorical exclusion*." 10 C.F.R. § 1021.410(b) (emphases added). Because impermissible "[s]egmentation can occur when a proposal is broken down into small parts *to avoid the appearance of significance of the total action*," to invoke a CE, NNSA must determine that "the proposal is not connected to other actions with potentially significant impacts, [and] is not related to other actions with individually insignificant but cumulatively significant impacts." *Id.* § 1021.410(b)(3) (emphasis added).

Here, however, NNSA has sidestepped these requirements by breaking the Extended Life *Program* into *dozens* of purportedly "small parts," thereby avoiding any holistic assessment of the impacts of, and alternatives to, the entire program. This is a classic example of unlawful segmentation designed to avoid NEPA's focus on the "'big picture' relative to environmental problems" with an overall agency action. *Swain v. Brinegar*, 517 F.2d 766, 775 (7th Cir. 1975).

Worse, the vast majority of NNSA's categorical exclusions entirely fail even to consider the issue of segmentation. Because DOE regulations require a determination on this issue, which NNSA failed to provide in the vast majority of instances, its use of these CEs was unlawful and

arbitrary and capricious. *Sierra Club*, 828 F.3d at 407 (an agency decision is arbitrary and capricious if it "entirely failed to consider an important aspect of the problem").[9]

On the other hand, a handful of categorical exclusions purport to determine that "[t]he proposal has not been segmented" by merely checking a box to that effect. *E.g.* AR20665. However, these examples not only highlight NNSA's failure to even consider this issue in most CEs, but also must fail on their own right because they do not provide any reasoned basis for the purported determination. *See Cal. v. Norton*, 311 F.3d 1162, 1176 (9th Cir. 2002) ("the agency must at the very least explain why the action does not fall within one of the exceptions").

Compounding the agency's arbitrariness, various CEs clearly reveal the connected nature of the proposed actions. For example, one CE notes that the proposed action "is part of the Nuclear Facility Electrical Modernization [] Project" (a larger set of electrical upgrades to existing facilities), but does not consider segmentation. AR 31480. Three separate CEs address replacement of humidity control equipment and related infrastructure *in a single building*, but ignore the obvious connection between the proposed activities. AR31540; AR31582; AR31613. Still another applies to "demolish[ing] [an] Electropolisher unit" and notes that "installation of the new [unit] will be covered" under another NEPA process, but ignores the clear connection between the two. AR31388. One CE for a new "electrical utility infrastructure upgrade" that aims to "provide Y-12 with a reliable power supply," in which NNSA purports to check the box

[9] NNSA's categorical exclusions that fail to analyze or even mention segmentation include AR31471; AR31402–03; AR31358–59; AR31372; AR18013; AR31429; AR31354; AR31376; AR31363–64; AR31380; AR31411; AR31397; AR31393; AR31387; AR31424; AR31419; AR31415; AR31434; AR31466–67; AR31461; AR31456–57; AR31453; AR31449; AR31441; AR31438; AR31474–75; AR31478; AR31483; AR31484; AR31488; AR31500; AR31508; AR31516; AR31526; AR31533; AR31538; AR31543; AR31548–49; AR31553–54; AR31557–58; AR31562; AR31566; AR31569–70; AR31584–85; AR31593; AR31605; AR31612; AR31617; and AR31637.

to find that the "proposal is not connected to other actions with potentially significant impacts," AR20665, fails to recognize that *on the same day* NNSA issued a separate exclusion for "new power distribution stations" for a Y-12 facility, AR31567. Yet another CE for a project "to improve the reliability of the Y-12 site's electrical power distribution system" fails to recognize either of the prior, clearly connected actions. AR31416.[10]

In fact, all of the actions implementing the ELP for which NNSA has invoked categorical exclusions are actually "connected to other actions with potentially significant impacts," or "related to other actions with individually insignificant but cumulatively significant impacts." 10 C.F.R. § 1021.410(b)(3). At the very least, all of these actions are interrelated as components of the ELP, which, as discussed above, has significant environmental impacts. Moreover, NNSA regards the entire ELP as "integral to the overall strategy" for Y-12 modernization, AR26290, which indisputably has significant environmental impacts. Thus, for all of these reasons, NNSA's reliance on CEs is a textbook case of improper segmentation.

2. NNSA has also relied on categorical exclusions that cannot apply here.

NNSA has also violated its own regulations by relying on categorical exclusions that simply do not apply here. For example, one of NNSA's most common categorical exclusions is for "[i]nstallation or relocation of machinery or equipment," which NNSA uses to exempt from NEPA review moving enriched uranium processes from one facility to another. *E.g.* AR31453 (for "a new chip melt furnace in Building 9215" to replace a similar system in Building 9212); AR31446 (for moving a "specialty mill in Building 9215 to 9201-5N"); AR31472 (for moving

[10] That NNSA checked a box purporting to find that a project that will "provide Y-12 with a reliable power supply" and "supply the [UPF] with sufficient and reliable power" is somehow "not connected to other actions with potentially significant impacts," AR 20665, despite the proposed action being *literally physically connected* to the UPF and other Y-12 facilities highlights the arbitrary and capricious nature of NNSA's check-the-box approach.

"induction brazing equipment from Building 9202 to 9204-2E"). However, in a similar action, NNSA found an EA necessary precisely because "*there are no [CEs] that allow relocation of existing processes or operations on the Y-12 Plant site.*" AR30242 (emphasis added).

NNSA's invocation of the CE for "Installation and Relocation of Machinery and Equipment" for an "electrorefining project," AR18013, is a particularly "egregious example" of the unlawful use of CE's, as explained in Mr. Alvarez's comments. As Mr. Alvarez explained, electrorefining is "an experimental procedure with *no proven history of operational success*, even on a pilot scale," and "is also highly hazardous." AR31665; *see also* AR30061 (electrorefining is a "new technology"); AR20443 (same). Because it is unproven and hazardous, a categorical exclusion is improper. *See* 40 C.F.R. 1508.4 (categorical exclusions are appropriate only for actions "which have been found to have no [environmental] effect"). NNSA's response asserted that a categorical exclusion was properly applied but entirely failed to consider that electrorefining is a new, unproven, hazardous technology. AR31149.

Likewise, NNSA commonly invokes a CE for "routine maintenance" to exempt ELP activities from NEPA review. *E.g.* AR31393; AR31380; AR31376; AR31438. However, the ELP is a far cry from "routine maintenance." As described above, NNSA itself has found that it has not properly maintained the aging ELP facilities for years, instead using a "run-to-failure approach," AR30105, while failing to make "investments required to continue safe operations." AR20442. Consequently, NNSA describes the ELP as "a suite of extensive refurbishments and upgrades to address the symptoms of [the] previous practice of underfunding maintenance requirements in these aging facilities." AR30113. *Id.* In fact, far from being "routine," the ELP's extensive activities "must be performed during a time that production *is not using process equipment for routine operations*." *Id.* (emphasis added). Because the ELP's proposed upgrades

are in fact anything but routine, NNSA's attempt to repackage them as "routine maintenance" to exclude these activities from NEPA review is arbitrary and capricious.

3. NNSA has also unlawfully failed to consider extraordinary circumstances.

"[T]o comply with NEPA, the agency must determine whether a CE applies and whether an 'extraordinary circumstance' exists that precludes the use of a CE." *Sierra Club*, 828 F.3d at 410 (quoting 40 C.F.R. § 1508.4); *see also* 10 C.F.R. § 1021.410(b) ("To find that a proposal is categorically excluded, DOE shall determine" that "[t]here are no extraordinary circumstances").

Even aside from the segmentation issue, NNSA has failed to show that no extraordinary circumstances foreclose the use of categorical exclusions for the ELP. Indeed, the vast majority of NNSA's CEs do not even *mention* extraordinary circumstances, let alone address the issue. *E.g.* AR31407. Nor does the 2018 SA, in which NNSA for the first time publicly disclosed its extensive reliance on categorical exclusions, provide any consideration of extraordinary circumstances. Because CEQ and DOE regulations clearly require NNSA to "determine" that no extraordinary circumstances apply in order to invoke any categorical exclusion, and because NNSA has failed to do so here, it has acted in an arbitrary and capricious manner.[11] *Sierra Club*, 828 F.3d at 407 (an agency decision is arbitrary and capricious if it "entirely failed to consider an important aspect of the problem").

Moreover, the record reveals that extraordinary circumstances are present that preclude the use of categorical exclusions for the ELP. Such circumstances include "uncertain effects or effects involving unique or unknown risks." 10 C.F.R. § 1021.410(b)(2). Here, although NNSA failed even to consider the issue, NNSA's CE documents amply reflect "uncertain effects or effects involving unique or unknown risks." *Id.* For example, as Mr. Alvarez explained, because

[11] The CEs that fail to address segmentation likewise fail to address extraordinary circumstances.

electrorefining is an unproven, hazardous technology, it plainly has uncertain effects. AR31667. Similarly, another categorical exclusion reveals that the agency is "uncertain" as to whether the project will involve radioactive waste, hazardous waste, mixed waste, PCB waste, or asbestos waste, as well as whether the project will involve "Rad/haz substance exposure." AR31502; *see also* AR31510 ("uncertain" impacts about radioactive and asbestos waste); AR31518 ("uncertain" impacts about radioactive, PCB, and asbestos waste). Other CEs stress that "[t]he PCB status of fluid-filled systems or equipment must be determined" before the action occurs. *E.g.* AR31482; 31474; 31375. Yet another CE finds that the "project has the potential to have an effect on [radioactive hazardous air pollutant] air emissions." AR31451.

More generally, *the entire ELP* is fraught with highly uncertain effects, including uncertainty about seismic risks, uncontrolled criticality accidents, and whether resulting contamination would be contained. *See supra* at 10, 17. As such, the use of categorical exclusions for *any aspect of the ELP* is unlawful and arbitrary and capricious.

The record also includes a handful of categorical exclusions in which NNSA purports to determine that no extraordinary circumstances apply by merely checking a box to that effect. AR20665; AR31525; AR31524; AR31571; AR31646. These documents correctly note that DOE's "Regulatory Requirements" include a determination that "no extraordinary circumstances" apply, *e.g.* AR20665—highlighting the agency's failure to consider extraordinary circumstances in the vast majority of categorical exclusions in the record.

However, merely checking a box to assert that no extraordinary circumstance applies is insufficient to demonstrate compliance with NEPA or agency regulations. Especially where, as here, "there is substantial evidence in the record that exceptions to the categorical exclusion may apply, the agency must at the very least explain why the action does not fall within one of the

exceptions." *Norton*, 311 F.3d at 1176; *cf. Sierra Club*, 828 F.3d at 410 (approving a CE because the agency explained why an extraordinary circumstance did not apply).

C. The Extended Life Program is a new federal action that has not been the subject of any NEPA analysis.

Defendants have attempted to avoid the need for an EIS on the ELP by arguing that it is "not a new program," but rather the same as the "Upgrade-in-Place Alternative" from the 2011 SWEIS. AR31145. This justification flatly contradicts the record. To begin with, the use of categorical exclusions *assumes* the existence of new "actions," albeit ones that do "not individually or cumulatively have a significant effect" on the environment. 40 C.F.R. 1508.4. In any event, the notion that the ELP is not "new" for purposes of NEPA review is groundless. The 2018 SA itself states that the ELP "was established" "[i]n *response* to NNSA's decision to reduce the scope of the UPF and continue certain EU operations in existing facilities." AR31085 (emphasis added); *see also* AR20473 (ELP "Team Charter" from September 2015 stating that "Y-12 has concluded that to sustain an acceptable risk for safe and reliable nuclear operations in these enduring facilities there is a need to implement a new program, the enriched uranium Extended Life Program"). In short, the record makes abundantly clear that the ELP is a new program that did not exist until after NNSA abandoned the decision it had made in 2011.

Similarly, NNSA's contention that the 2011 SWEIS fully analyzed the ELP—despite the fact that the ELP *did not exist at that time*—irrationally dismisses important differences between the Upgrade-In-Place Alternative and the ELP: the former was not limited by cost, while the latter is profoundly cost-limited. NNSA illogically asserts that the SWEIS's description of the "Upgrade In-Place Alternative" as requiring upgrades "to contemporary environmental, safety, and security standards *to the extent possible within the limits of the existing structures*" somehow informed the public that "these upgrades may be limited by technical and cost considerations."

Id. However, this reading runs profoundly against the 2011 SWEIS's plain meaning. The 2011 SWEIS told the public that if NNSA were to press facilities into ongoing service, "they would require structural upgrades *to bring the buildings into compliance*" with "current codes and standards related to natural phenomena [] events (e.g. tornadoes and earthquakes)." AR16948 (emphasis added). In fact, the 2011 SWEIS's "purpose and need" included "[c]omply[ing] with modern building codes and environment, safety, and health [] standards." AR16875–76. The *only mention* of costs in the description of the Upgrade In-Place Alternative is a statement that "[u]pgrades would be performed over a 10-year construction period . . . to spread out the capital costs." AR16948. The 2011 SWEIS did not state that the public would have to accept ongoing nuclear safety risks from structural deficiencies that NNSA now deems too costly to correct.[12]

In stark contrast to the 2011 SWEIS's "need" to "[c]omply with modern building codes," AR16875–76, NNSA's new "*plan is not to bring the long-range Y-12 [enriched uranium] facilities to current seismic standards*" because "it would be prohibitively expensive." AR20632 (emphasis added). Likewise, while the Upgrade-In-Place Alternative would have brought aging facilities up to modern codes "*to the extent possible*," AR16947 (emphasis added), the 2018 SA stated that the ELP's "goal is to reduce risks to be as low *as reasonably achievable*." AR31138 (emphasis added). Indeed, the "premise of ELP is that some risk acceptance will occur in lieu of spending," AR26062, including requiring the public to "accept" risks from earthquakes, uncontrolled nuclear reactions, and the facilities' inability to contain contamination. Because such risk acceptance was not part of the Upgrade In-Place Alternative, NNSA's contention that it

[12] The 2011 SWEIS also shows that NNSA understood how to tell the public that it would consider cost as a limiting factor for implementing actions. For example, the 2011 SWEIS told the public that NNSA would "evaluate . . . means of reducing the carbon footprint of Y-12 and implement those that are determined to be feasible and cost-effective." AR 17109.

analyzed the ELP in the 2011 SWEIS is entirely without merit. In fact, NNSA has never subjected the ELP, its plan to "accept" serious risks—and to force the public to accept such risks—to the public scrutiny and input regarding alternatives and impacts that Congress mandated in the NEPA process.

II. NNSA IS UNLAWFULLY SEGMENTING THE OVERALL ANALYSIS OF THE MODERNIZATION OF Y-12 REQUIRED BY NEPA.

Just as NNSA improperly segmented the ELP into numerous CEs, it has also improperly segmented analysis of its broader new Y-12 modernization plan. NEPA requires that "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." *Hirt v. Richardson*, 127 F. Supp. 2d 833, 842 (W.D. Mich. 1999). However, as Mr. Alvarez explained, "NNSA is failing to consider its actions as a unified whole." AR31659–60.

Here, since NNSA fundamentally redesigned its Y-12 modernization plans in order to reduce costs, the agency has failed to prepare any NEPA document that considers the impacts of, or alternatives for, the entirety of its new strategy for overall Y-12 modernization. Indeed, while NNSA *internally* considered alternatives and consulted *selected* individuals to figure out how to keep costs under $6.5 billion, it excluded the public. However, each component of Y-12 modernization—including the reduced-scope UPF, the ELP, the retention of a secure perimeter, and the eventual cleanup of excess facilities—are integral parts of NNSA's new "overarching modernization strategy." AR26289. Because these new decisions are all clearly inter-related, they must be examined in a single EIS, and the public must be consulted. *Hirt* 127 F. Supp. 2d at 842 (agencies must discuss cumulative actions, connected actions, and similar actions "in the same impact statement").

Instead, NNSA is taking a scattershot approach to NEPA that lacks any rhyme or reason, preparing EAs for some activities, relying on CEs for others, and ignoring NEPA review for some actions altogether. Thus, NNSA is preparing an EA for a new Emergency Operations Center, AR19731, because the new "project scope was different than the original" proposal in the 2011 SWEIS, AR19857—but is not preparing any new NEPA documentation for the re-designed UPF or the ELP despite those projects also changing scope dramatically. Similarly, NNSA is preparing an EA for a Lithium Production Facility because "there are no [CEs] that allow relocation of existing processes or operations on the Y-12 Plant site," AR30242—but is invoking numerous CEs for relocating existing operations in the ELP.[13]

This scattershot approach to NEPA constitutes unlawful segmentation. "The dependency [between all of the Y-12 modernization efforts] 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. 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 activities in the new buildings and the entire enriched uranium mission. The same is true of the remaining activities at Y-12; all of these activities are part of NNSA's new "overarching modernization strategy." AR26289. As Mr. Alvarez explained, NNSA's refusal to consider its overarching modernization strategy in any holistic manner "has artificially constrained its analysis in critical ways . . . by arbitrarily dividing the

[13] DOE is also excluding from NEPA review a new Mercury Treatment Facility and landfill, wrongly stating that "NEPA, as a matter of law, does not apply to CERCLA cleanup actions." AR 31084; AR 31119. However, courts have previously rejected this argument. *NRDC v. Dep't of Energy*, No. C-04-04448, 2007 WL 1302498, at *16 (N.D. Cal. May 2, 2007).

analysis of the modernization of the Y-12 Complex into small components that should instead be considered together." AR31668.

III. NNSA IS VIOLATING NEPA BY REFUSING TO PREPARE A NEW OR SUPPLEMENTAL EIS FOR NNSA's NEW Y-12 MODERNIZATION PLAN.

To comply with NEPA, NNSA must prepare a new or supplemental Site-Wide Environmental Impact Statement for its new Y-12 modernization plan, as Plaintiffs have requested for years. *See* AR18357 (request from OREPA in 2014 for a new EIS); AR26042 (similar request from OREPA and Nuclear Watch in 2016).

A. New Information and Changed Circumstances Warrant an SEIS.

As explained, NEPA requires an SEIS when "[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); *League of Wilderness Defenders v. Connaughton*, 752 F.3d 755, 760 (9th Cir. 2014) (new information that "raise[s] substantial questions regarding the project's impacts [is] enough to require further analysis."). Here, as described above, *supra* at 11–13, between NNSA's 2011 SWEIS and decision to build a single-facility UPF that would replace all deteriorating Y-12 enriched uranium facilities, and the agency's 2016 Amended Record of Decision to build a multiple-facility UPF and continue to rely on several deteriorating facilities for decades to come, the agency received important new information that bore directly on the risks associated with the agency's new decision. This information included the USGS's 2014 seismic hazard maps showing a risk of earthquakes in the vicinity of Y-12 of more than double the intensity predicted in 2008, and a report from the DNFSB indicating that Y-12's deteriorating facilities would be seriously damaged or destroyed by such an earthquake and that resulting contamination—including uncontrolled nuclear reactions—would likely not be contained in such an event. *See supra* at 17. Additionally, NNSA received a report from DOE's

IG indicating that deteriorating excess facilities, including those at Y-12, "pose increasing risks to mission, workers, the public, and the environment." AR19107.

Moreover, after NNSA issued its 2016 Amended Record of Decision, the agency *continued* to receive new information relevant to its re-designed Y-12 modernization strategy. In particular, in March 2017, the DNFSB issued a report on the ELP "Safety Strategy," finding that aging ELP facilities "cannot withstand" large earthquakes, "cannot demonstrate that processes remain subcritical" in the event of an earthquake, and cannot "demonstrate the facility structures can provide high assurance of confinement of radioactive materials." AR26300–02. Similarly, in 2017 the DNFSB also provided advice regarding NNSA's new, reduced-scale UPF, finding that "it would be prudent to designate the [fire suppression system] as safety-significant," and to impose more rigorous testing on fuel pumps for the fire suppression system. AR26325.

Although the 2018 SA—prompted by this lawsuit—for the first time addressed some of this information, it does not provide a sustainable explanation for why the new information and developments do not warrant an SEIS. Rather, the 2018 SA "acknowledge[d] that the documented safety basis reports for the existing Y-12 facilities will need to be updated to reflect updated seismic hazard information," including the 2014 USGS seismic hazard maps. AR31096. Similarly, the SA admits that "potential seismic upgrades at Extended Life Program facilities" will be based on the "reanalysis" of structural deficiencies that the DNFSB recommended. *Id.* Thus, the 2018 SA confirms that new information is valuable to ongoing NNSA decisions and thus supports preparing an SEIS. *See Marsh*, 490 U.S. at 374 (whether an SEIS is necessary "turns on the value of the new information to the still pending decisionmaking process").

Indeed, the 2018 SA makes clear that although NNSA is refusing to prepare any "further NEPA documentation," AR31122, the agency's decisionmaking process concerning crucial

aspects of the Y-12 modernization remains pending. Indeed, NNSA continues to evaluate alternatives for crucial decisions—which is supposed to be "the heart" of the NEPA process the agency is avoiding. 40 C.F.R. § 1502.14. For example, with regard to delayed cleanup of excess facilities—which the DOE IG stresses exposes the public to "ever-increasing levels of risk," AR19107—"[a]s a result of the IG report, DOE is *actively evaluating alternatives*," AR31083 (emphasis added), for "the worst of the worst" deteriorating facilities. AR19112. Similarly, NNSA is still gathering information and deciding what the ELP will—or even can—do to make aging buildings safer. AR31086 ("NNSA is also evaluating the existing facilities in terms of natural phenomena analyses, structural analyses, criticality vulnerability studies, and targeted upgrades."). Accordingly, NNSA *is* engaging in a process of gathering information about environmental risks and considering alternatives, but is refusing to use the NEPA process and incorporate public input as mandated by Congress.[14]

B. NNSA's "Bounding" Rationale For Refusing to Prepare an SEIS Is Arbitrary and Capricious.

In its 2018 SA, NNSA stated that it need not prepare an SEIS because the agency "does not believe there would be a significant change in *bounding impacts* as a result of the [new] reports." AR31109 (emphasis added). NNSA believes that the earthquake hazard "is bounded

[14] NNSA's departure from its NEPA obligations is underscored by its preparation of an SEIS in an analogous situation. In 2013, DOE prepared an SEIS for the "Long Term Management and Storage of Environmental Mercury" project. AR28572. In a parallel decision to the one at issue, the SEIS noted that DOE needed to decide "[w]hether to use existing buildings, new buildings, or a combination of existing and new buildings for mercury storage." AR28588. DOE specifically explained that it was preparing the SEIS because "[f]unding limitations precluded DOE from finalizing site selection," which "prompted DOE to reconsider several DOE sites" using the same criteria in its original EIS. AR28610. Nevertheless, although in this case funding limitations precluded DOE and NNSA from finalizing its decision regarding Y-12 modernization through the "big-box" UPF and caused the agencies to reconsider sites for the ongoing work at Y-12, NNSA arbitrarily refused to prepare an SEIS in this analogous instance.

by" an "aircraft crash into the [enriched uranium] facilities" and a "design basis fire for [highly-enriched uranium] storage." AR31108–09. In other words, the agency maintained that because the 2011 SWEIS analyzed the risks from an aircraft crash or a fire, and because NNSA believes that the earthquake hazard is smaller than these other, entirely different accidents, no further environmental analysis is necessary. *Id.*

However, NNSA's apples-to-oranges justification for failing to prepare any further NEPA analysis violates basic NEPA principles as well as DOE's own policies and common sense. To begin with, NEPA's requirement for an ongoing "hard look" in an SEIS aims to focus an agency's attention on the impacts from a new decision and to ensure that the agency considers all reasonable alternatives that may reduce those impacts. Here, the agency's continued reliance on aging buildings entails major federal action. *See supra* at 16–19 (discussing the ELP). Where, as here, "the change itself constitutes a major federal action that will significantly affect the environment, the agency must prepare an SEIS." *Detroit*, 329 F.3d at 529 (Moore, J., concurring). NNSA's refusal to prepare new NEPA analysis for its new decision because it believes hazards are "bounded" by a previous analysis of *different* risks deprives the public of a forthright accounting of the new decision's risks and any ability to participate in the consideration of alternatives to reduce those risks, which violates fundamental NEPA principles.

Indeed, DOE's own policies indicate that NNSA's "bounding" rationale is improper as applied here. DOE's *Recommendations for the Supplement Analysis Process* stresses that if an agency changes its plans so that its "proposed action differs substantially from all alternatives analyzed in an existing EIS," an SEIS is necessary "*even if the impacts are likely to be smaller than those estimated in the existing EIS.*" AR31713 (emphasis added). Here, as the DNFSB stated, NNSA's new Y-12 modernization strategy entails "significant changes to the UPF

project," AR19124, considered in the 2011 SWEIS. The reduced-scope UPF no longer replaces all aging facilities and includes multiple buildings rather than a single new facility. *See* AR31072 (the "proposed action was different"). And as noted above, NNSA's new ELP for certain aging facilities is profoundly cost-limited in a way that was not considered in the 2011 SWEIS. *See supra* at 26–28. Overall, the new Y-12 modernization strategy is significantly different from any alternative considered in the 2011 SWEIS—most notably because the new strategy will require the public to "accept" risks that NNSA unilaterally deems too costly to correct. Under these circumstances, DOE's own policies indicate that an SEIS is proper.

In fact, DOE's own NEPA guidance also flatly rejects using a "bounding" analysis in these circumstances. DOE's guidance on "Using Bounding Analyses in DOE NEPA Documents" states that because bounding analyses use "simplifying assumptions," "DOE should take care to use that approach only . . . where the differences among alternatives would not be obscured." AR31735. Here however, NNSA relies on a bounding analysis to refuse to prepare a NEPA analysis that would explore alternatives to NNSA's new Y-12 modernization plan, elucidate differences between such alternatives, and allow the public to participate in the choice among alternatives. Indeed, DOE's guidance specifically stresses that agencies should not do precisely what NNSA is doing here: "*It 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.*" AR31274 (emphasis added).

Moreover, NNSA's reliance on a bounding analysis also violates NEPA regulations that govern an agency's duties when making a decision based on 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. 40 C.F.R. § 1502.22(a). NNSA has flipped this approach on its head; instead of gathering necessary information about the risks of relying on aging buildings, which is essential to a reasoned choice among alternatives for upgrading these buildings, NNSA deferred gathering that information and refused to prepare any "further NEPA documentation." AR31122. NNSA "has the process exactly backwards." *Nat'l Parks Conservation Ass'n v, Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001) (*abrogated on other grounds by Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139 (2010)). "[T]he 'hard look' must be taken before, not after, the environmentally-threatening actions are put into effect." *Id.* Under these circumstances, NNSA's reliance on a bounding analysis to refuse to prepare an EIS or SEIS violates NEPA.

Plaintiffs explained the inappropriateness of NNSA's bounding analysis in detailed comments on the draft 2018 SA. AR31272–75. Despite the 2018 SA's clear statements that NNSA will not prepare an SEIS because it "does not believe there would be a significant change *in bounding impacts*," and that the seismic hazards revealed by new information "*is bounded by* [] other types of accidents," AR31108–09 (emphases added), NNSA responded to Plaintiffs' comments by "disagree[ing] that the SA relies on a 'bounding analysis.'" AR31146. NNSA asserted that the phrase "bounding analysis" "implies that NNSA only evaluated a single, maximum reasonably foreseeable accident," *id.*, when NNSA actually considered "two accident scenarios." AR31147. NNSA then reiterated its conclusion that no SEIS is necessary because "seismic risks would not exceed the quantified risks under these two accident scenarios" of an airplane crash and a large fire. *Id.* However, NNSA's simultaneously denying that it is engaging in a bounding analysis while in fact doubling down on that bounding analysis is quintessential arbitrary and capricious behavior. *See New England Coal. for Nuclear Pollution v. Nuclear*

Regulatory Comm'n, 727 F.2d 1127, 1130 (D.C. Cir. 1984) (Scalia, J.) (an agency "adopt[ing] one [position] and apply[ing] the other . . . is the essence of arbitrary and capricious action").

IV. NNSA'S SUPPLEMENT ANALYSES ARE ARBITRARY AND CAPRICOUS AND CANNOT CURE ITS NEPA VIOLATIONS.

NNSA's reliance on backward-looking SAs is arbitrary and capricious in this circumstance because those documents wholly fail to perform NEPA's essential, forward-looking functions, highlighting the need for, and value of, a further NEPA process.

A. Backward-Looking SAs Do Not Perform Essential NEPA Functions.

NNSA's backward-looking SAs cannot cure the fact that NNSA has violated NEPA by committing to a new Y-12 modernization plan without engaging in a NEPA process for that new plan. NEPA's "action-forcing procedures" require agencies to "take a 'hard look' at the environmental consequences *before taking a major action*." *Balt. Gas & Elec. Co.*, 462 U.S. at 97 (emphasis added). NEPA is expressly not designed to allow an agency to "rationalize or justify decisions already made." 40 C.F.R. § 1502.5.

Here, however, highlighting NNSA's fundamental departure from NEPA's core mandate that agencies consider environmental impacts of their actions *before* making a decision, NNSA's reliance on SAs to justify decisions already made is inherently backward-looking. *See* AR31072 (the 2018 SA has a "focus on the changes and new information *that have occurred at Y-12 since publication of the 2011 SWEIS*" (emphasis added)). Indeed, NNSA's own ELP Implementation Plan admits 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*." AR26062 (emphasis added). By looking backward "to justify decisions" already made—and by excluding the public from those decisions—NNSA's reliance on SAs violates NEPA and is arbitrary and capricious.

B. NNSA's 2018 SA Is Arbitrary and Capricious Because It Unlawfully Defers Consideration of Decisions NNSA Has Already Made and Begun to Implement.

Facing this litigation, for the first time in seven years, NNSA accepted public comments on the draft 2018 SA. Plaintiffs, who have been requesting a new EIS—and the ability to provide input on NNSA's changed plans—since at least 2014, submitted extensive comments, AR31255–85, including a highly relevant report from an experienced seismologist, AR31649–57. NNSA's response to these comments confirms the agency's approach of making a decision first and examining the risks later, which stands NEPA on its head.

For example, NNSA's continued reliance on aging, vulnerable facilities will entail maintaining a larger secure perimeter than if it had implemented its 2011 decision to replace all aging buildings. AR31081. In 2011, NNSA found that shrinking this perimeter could result in an "improvement in efficiency of up to 20 percent" for "environmental clean-up projects," AR17911, which would have been particularly valuable in light of DOE's IG confirming that delays in the cleanup of contaminated facilities "expose the Department, its employees and the public to ever-increasing levels of risk." AR19107. Now, although NNSA admits that retaining a larger secure area will result in "increased cost and losses in efficiency" for required cleanups of contaminated facilities, the agency irrationally denies that "losses in efficiency" will result in any delay to cleanups. AR 31152. And while NNSA states that it *may at some future date* "prepare additional NEPA documentation" for its new security perimeter project, the agency *has already committed to this plan*, AR31081, *and already denied its environmental impacts*. NNSA's willful blindness to the prospect of delays in cleanups is the opposite of the "hard look" NEPA requires.

Likewise, with regard to seismic concerns, Dr. David Jackson, "a geophysicist with a great deal of 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," stated that in his "professional opinion, NNSA has conducted no rigorous seismic hazard evaluation associated with its activities" at Y-12. AR31649. Plaintiffs explained that in light of these issues, NNSA's decision to rely on aging, vulnerable buildings *without first understanding the risks* is a violation of NEPA and arbitrary and capricious. AR31267–72.

For example, Dr. Jackson explained that "NNSA has fallen far short of a professional, scientific consideration of the issues by neglecting the recent USGS studies," including the USGS 2014 seismic hazard maps and underlying data, as well as even more recent updates from the USGS in 2016, 2017, and 2018 that "indicate even greater hazard than that in the 2014 map." AR31650. Similarly, new seismological evidence shows that the Y-12 area has experienced "at least three large earthquakes" in the past. AR31670. NNSA's only response is that it will consider such new information at an undisclosed later date "[w]hen the site-specific seismic hazard study is conducted to support the Extended Life Program." AR31151. NNSA thus effectively concedes the importance of this information, but instead of gathering this information to publicly consider alternatives as NEPA requires, NNSA intends to use it "to support" a decision the agency has already made without any public input.

NNSA similarly deferred any modern modeling of risks in existing facilities. Thus, Dr. Jackson explained that NNSA's failure to conduct non-linear modeling for existing buildings—as the DNFSB recommended in 2014—is "egregious" because, in contrast to the "overly simplified" linear analysis that NNSA has relied on, non-linear analysis accounts for the fact that "even a weak earthquake may be sufficient to damage or destroy weaker building components," and that "[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." AR31652. This issue is

especially critical now, because the Y-12 area has experienced recent earthquakes—exactly the type of event that Dr. Jackson warned could weaken the buildings and exacerbate the risk of collapse. *See supra* at 15. Indeed, modern seismic safety standards "are updated precisely because non-linear analysis and other modern modeling techniques can identify structural upgrades that allow buildings to better withstand earthquake forces." *Id.* Thus, the failure to meet modern codes "is not merely a failure on paper to meet a building code," but shows that the facilities "lack the features that modern engineering analysis shows to be necessary to withstand earthquake shaking." AR31653. In response, NNSA merely stated it would consider non-linear modeling later, "when the seismic evaluations of the facilities are performed," AR31151—long after the decision has been made.[15]

However, as Dr. Jackson explained, NNSA's approach of "[c]ommitting to the use of these vulnerable facilities before obtaining any real understanding of the risk associated with their ongoing use is illogical, scientifically flawed, and deeply imprudent." AR31651. Dr. Jackson explained that to make a rational, scientifically defensible decision, "NNSA must disclose the methods, scope, research plans, and results of these studies *before the agency decides to continue to use aging, vulnerable buildings.*" *Id*. Likewise, Plaintiffs stressed that "NNSA has no foreseeable recourse if seismic experts conclude that these buildings are not fit for use for the proposed extended lives." AR31280. Plaintiffs explained that in that event, NNSA would be engaged in a multi-billion dollar construction effort for "a facility that is inadequate to

[15] Likewise, NNSA ignored Dr. Jackson's concern that "effects on one building could carry over to nearby buildings," which is a "secondary hazard" of earthquakes that is "especially important" here because Y-12's facilities are "very near to one another and are already in advanced states of disrepair." AR31651. NNSA responded that it considered *other* secondary hazards, such as landslides and soil liquefaction, AR 31151, but failed to address the concern about neighboring, dilapidated buildings. Again, this is the opposite of the hard look NEPA requires.

meet the agency's stated mission requirements and incapable of being modified to accommodate all EU operations." *Id.* This is precisely the outcome NEPA is designed to avoid. *Id.*

NNSA's response to this critical issue is irrational and contrary to fundamental NEPA principles. NNSA contends that Plaintiffs' comment "overlooks the fact that NNSA has already concluded that these facilities are capable of being operated during this extended period and reviewed the risks." AR31151. NNSA insists that "it would be speculative to pre-judge the outcome of the seismic review process." *Id.* Yet that is precisely what *NNSA has done*: the agency has pre-judged the outcome of the seismic review process by deciding to use these buildings regardless of what the seismic review reveals. Indeed, NNSA's statement that it has "reviewed the risks" flatly contradicts the record, which shows that NNSA is still gathering "updated seismic hazard information." AR31010. Fundamentally, NNSA's decision to rely on aging buildings that it knows are vulnerable to earthquakes without obtaining information that the agency concedes is necessary to evaluating seismic risks is exactly the opposite of the decision-making framework that Congress mandated through the NEPA process. *WildEarth Guardians v. Montana Snowmobile Ass'n*, 790 F.3d 920, 927 (9th Cir. 2015) ("NEPA emphasizes the importance of coherent and 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.").

CONCLUSION

For all the reasons stated above, the Court should find that NNSA has violated NEPA. In light of these violations and the nature of the operations at Y-12, the Court should, as provided by the APA, set aside and remand the agency decisions and SAs under review and remand for further NEPA analysis. *See* 5 U.S.C. § 706(2).

Respectfully submitted,

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