

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

In the Matter of)	Docket No. 72-1050
Interim Storage Partners LLC)	(NRC-2016-0231)
(Consolidated Interim Storage Facility))	November 13, 2018
)	

* * * * *

PETITION OF DON'T WASTE MICHIGAN, CITIZENS' ENVIRONMENTAL COALITION, CITIZENS FOR ALTERNATIVES TO CHEMICAL CONTAMINATION, NUCLEAR ENERGY INFORMATION SERVICE, PUBLIC CITIZEN, INC., SAN LUIS OBISPO MOTHERS FOR PEACE, SUSTAINABLE ENERGY AND ECONOMIC DEVELOPMENT COALITION AND LEONA MORGAN. INDIVIDUALLY, TO INTERVENE, AND REQUEST FOR AN ADJUDICATORY HEARING

I. INTRODUCTION

Pursuant to 10 C.F.R. § 2.309, 10 C.F.R. Part 72, and the hearing notice published by the Nuclear Regulatory Commission (“NRC or Commission”) at 83 Federal Register 44070 (August 29, 2018), Petitioners Don’t Waste Michigan, Citizens for Alternatives to Chemical Contamination, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Nuclear Energy Information Service, Citizens’ Environmental Coalition, and Sustainable Energy and Economic Development (SEED) Coalition, (“DWM,” “CACC,” “PC,” “SLOMFP,” “NEIS,” “CEC,” and “SEED”) and Leona Morgan, an individual (collectively, “Petitioners”) hereby petition and move for leave to intervene and request a hearing before the Nuclear Regulatory Commission on the application of Interim Storage Partners/Waste Control Specialists (“ISP” and “WCS”) for a license to construct and operate the WCS Consolidated Interim Spent Fuel Storage Facility in Andrews County, Texas (“ISP CISF,” “WCS CISF,” “WCS” or “ISP”).

In its first year of operations, ISP proposes to store up to 5,000 metric tons of uranium of commercial spent nuclear fuel (“SNF”) and greater-than-Class-C radioactive waste (“GTCC”) above-ground on specially-built pads over a 40-year license term. Over the initial 20 years of operation, ISP anticipates delivery to the site for storage, a total of 40,000 metric tons of SNF and GTCC waste. Estimates vary of how long the facility will operate, from 60 to 100 years, to “indefinitely.”

This Petition sets forth with particularity the contentions raised by the above-named Petitioners. Petitioners DWM, CACC, PC, SLOMFP, NEIS, CEC and SEED have set forth their qualifications to serve as organizations with representational legal standing through their members to oppose the ISP/WCS application and pursue its dismissal, with prejudice.

II. LEGAL STANDING OF PETITIONERS TO INTERVENE

A. Description of the Proceeding

This proceeding concerns the application submitted to the NRC by ISP for a specific license pursuant to Part 72 of Title 10 of the Code of Federal Regulations, which contains the “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.”

On August 29, 2018, notice of hearing and opportunity to petition for leave to intervene was published in the Federal Register. The within Petition is the response by the intervening organizations to this notice. Petitioners delineate the justifications of their standing to intervene in Section II, *infra*. In Section III, they enter a standing objection to allowing this proceeding to go forward. In Section IV, Petitioners set forth their contentions.

B. Fundamental Prerequisites for Standing

1. Article III Standing To Assert A Violation of Procedural Rights Under NEPA

Three principles should guide any analysis of whether a plaintiff has standing to assert a violation of procedural rights under NEPA. First, “Congress has the power to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before.” *Massachusetts v. EPA*, 549 U.S. 497, 516, 127 S.Ct. 1438 (2007) (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 580, 112 S.Ct. 2130 (1992) (Kennedy, J., concurring in part and concurring in the judgment)); *see also Warth v. Seldin*, 422 U.S. 490, 500, 95 S.Ct. 2197 (1975) (“The . . . injury required by Art. III may exist solely by virtue of statutes creating legal rights, the invasion of which creates standing.” (internal quotation marks omitted)).

Second, “Congress has presumptively determined that the failure to comply with [NEPA] has detrimental consequences for the environment.” *Save Our Cumberland Mountains v. Kempthorne*, 453 F.3d 334, 347 (6th Cir. 2006) (internal quotation marks omitted). After all, “countless lawsuits in which [the courts] upheld a plaintiff’s standing were predicated on [the] understanding” that an agency may be persuaded to alter a project if, by complying with NEPA, “its eyes are open[ed] to the environmental consequences of its actions,” *Lemon v. Geren*, 514 F.3d 1312, 1315 (D.C. Cir.).

Third: injury, causation, and redressability requirements exist primarily to prevent a court from rendering an advisory opinion; to stop the judiciary from depriving an injured party of her day in court; and, most importantly, to keep the courts from assuming the powers of the executive or the legislature. *Valley Forge Christian Coll. v. Americans United for Separation of Church and State, Inc.*, 454 U.S. 464, 473-74, 102 S.Ct. 752 (1982); *see also Hein v. Freedom*

from Religion Found., 551 U.S. 587, 616, 127 S.Ct. 2553, 168 L.Ed.2d 424 (2007) (Kennedy, J., concurring). Courts must take care to apply standing doctrine in a manner that effectuates its undergirding purposes.

These principles explain why procedural rights under NEPA are termed “special.” *Lujan*, 504 U.S. at 573 n.7. In a NEPA case, “injury-in-fact is increased risk of environmental harm stemming from the agency's allegedly uninformed decision-making.” *Sierra Club v. U.S. Army Corps of Engineers*, 446 F.3d 808, 816 (8th Cir. 2006); *Missouri Coalition for Environment v. F.E.R.C.*, 544 F.3d 955, 958 (8th Cir. 2008); *see also Sierra Club v. U.S. Army Corps of Engineers*, 645 F.3d 978, 995 (8th Cir. 2011) (quoting *Sierra Club v. Marsh*, 872 F.2d 497, 504 (1st Cir. 1989)).

Under these precedents, the injury-in-fact requirement is satisfied if a plaintiff has a concrete interest that is protected by NEPA, the concrete interest is threatened by government action, and the government allegedly violated NEPA. *Friends of Tims Ford v. Tenn. Valley Auth.*, 585 F.3d 955, 968 (6th Cir. 2009). And it is essentially self-evident that the NEPA plaintiff's procedural injury is “fairly traceable” to the government. *See Ouachita Watch League v. Jacobs*, 463 F.3d 1163, 1173 (11th Cir. 2006) (“[T]he plaintiffs were harmed when their procedural rights under NEPA were violated. Since the Forest Service (according to Ouachita) failed to follow NEPA, it is clear that the Forest Service caused Ouachita's alleged injury. That is the extent of Ouachita's burden to establish causation.”). Redressability is straightforward: “When a litigant is vested with a procedural right, that litigant has standing if there is some possibility that the requested relief will prompt the injury-causing party to reconsider the decision that allegedly harmed the litigant.” *Massachusetts*, 549 U.S. at 516.

In sum, NEPA compliance presumptively reduces the threat of environmental harm by increasing the chance that the government will modify--even slightly--its actions if it understands the nature and magnitude of that harm, *see Lemon*, 514 F.3d at 1315, and that is all the redressability prong requires, *see Massachusetts*, 549 U.S. at 516; *see also Consumer Data Indus. Ass'n v. King*, 678 F.3d 898, 903 (10th Cir. 2012) (“a favorable decision would relieve their problem ‘to some extent,’ which is all [the redressability prong] requires”); and *City of Dania Beach, Fla. v. FAA*, 485 F.3d 1181, 1186 (D.C. Cir. 2007).

2. Immediacy of NEPA Injury

NEPA injury comprises an immediate harm. In the case of the ISP/WCS facility, Petitioners’ members allege concerns for their health and safety if the ISP project proceeds and thousands of deliveries of SNF and GTCC waste are transported for purposes of stocking the CISF with spent nuclear fuel and GTCC wastes. Petitioners have raised multiple contentions to contest the factual completeness of the NEPA analysis. The procedural injury alleged by Petitioners and their members has already occurred: “[W]hen a decision to which NEPA obligations attach is made without the informed environmental consideration that NEPA requires, the harm that NEPA intends to prevent has been suffered.” *Massachusetts v. Watt*, 716 F.2d 946, 952 (1st Cir. 1983). NEPA procedures seek to minimize the risk of future harm by “influenc[ing] the decision making process; [their] aim is to make government officials notice environmental [and other] considerations and take them into account.” *Id.*

If the ER is adopted, unaltered, as the NEPA document in this case, then Petitioners’ procedural rights will have been violated and they will have suffered injury. *Friends of Tims Ford*, 585 F.3d at 968; *Ouachita Watch League*, 463 F.3d at 1171); *see also, Wright v. O’Day*,

706 F.3d 769, 771-72 (6th Cir. 2013); *Dismas Charities, Inc. v. United States DOJ*, 401 F.3d 666, 677-78 (6th Cir. 2005). If that occurs, Petitioners' injuries are directly traceable to the NRC. *Comm. to Save the Rio Hondo v. Lucero*, 102 F.3d 445, 452 (10th Cir. 1996).

Petitioners are asserting precisely the type of injury the agency can redress, *viz.*, if they prevail on their contentions, the Commission will order the Staff to comply with NEPA. *See Massachusetts v. EPA*, 549 U.S. at 517-18, 525-26. If the Commission makes that order, it will have the effect of causing modifications to the project, however slight, that will to some extent reduce the exposure of Petitioners' members to the risk of, or actual, radiological harm from construction, operation and decommissioning of ISP. All that is required in cases of procedural injury is "some possibility that the requested relief will prompt the injury-causing party to reconsider the decision that allegedly harmed the litigant." *Massachusetts v. EPA*, 549 U.S. at 525.

3. NRC Recognizes NEPA Violations As Injurious

To demonstrate legal standing in this licensing proceeding, the Petitioners must assert an actual or threatened, concrete and particularized, injury-in-fact falling within the zone of interests protected by the statutes governing NRC proceedings. The injury-in-fact must be fairly traceable to the challenged licensing action and must be likely to be redressed by a favorable decision.

International Uranium (USA) Corp. (White Mesa Uranium Mill), CLI-01-18, 54 NRC 27, 30 (2001); *Sequoyah Fuels Corp.* (Gore, Oklahoma Site Decommissioning), CLI-01-2, 53 NRC 9, 13 (2001); *Quivira Mining Co.* (Ambrosia Lake Facility, Grants, New Mexico), CLI-98-11, 48 NRC 1, 5-6 (1998); *Duke Cogema & Webster* (Savannah River Mixed Oxide Fabrication Facility), LBP-01-35, 54 NRC 403, 413 (2001). Generally, the Petitioners are membership

organizations whose individual members are situated along many anticipated rail, highway and barge routes by which SNF and GTCC wastes are likely to be transported from nuclear power reactor sites to the ISP site in Texas.

Petitioners oppose the licensing and construction of the ISP CISF. Below, they allege contentions detailing inadequacies within the ISP Application, Environmental Report, Safety Analysis Report and Emergency Response Plan.

Once a party demonstrates that it has standing to intervene on its own accord, that party may then raise any contention that, if proved, will afford the party relief from the injury it relies upon for standing. *See, e.g., Duke Power Co. v. Carolina Environmental Study Group*, 438 U.S. 59, 78-81 (1978) (rejecting a requirement for a “nexus” between the injury claimed and the right being asserted); *Sierra Club v. Morton*, 405 U.S. 727, 740 n.15 (1972) (“The test of injury-in-fact goes only to the question of standing to obtain judicial review. Once this standing is established, the party may assert the interests of the general public in support of its claims for equitable relief.”). *See generally* 3 K. Davis and R. Pierce, Administrative Law Treatise § 16.13 (1994); *Yankee Atomic Electric Company* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996). Certainly, denial of an NRC license for construction and operation of the ISP CISF would provide relief to the Petitioners inasmuch as there would be no threat of, or actual deliveries of, SNF and GTCC wastes to ISP by means of transportation through their communities.

4. The Injuries-in-Fact Claimed by Petitioners

The notion of “injury-in-fact” encompasses all radiation impacts, including those that do not necessarily amount to a regulatory violation. *See Duke Cogema Stone & Webster* (Savannah

River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC 403, 417 (2001) (citing *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 247-48 (1996)). A minor exposure to radiation—even if it is within regulatory limits—will suffice to state an injury-in-fact. *Id.*

In *Duke Cogema Stone & Webster*, the Atomic Safety and Licensing Board (“ASLB”) conferred standing on organizations whose individual members were concerned about encountering truckloads of mixed oxide nuclear fuel on highways at some distance from nuclear reactors in the region:

Each of these individuals also has stated an injury in fact. They all have asserted the threatened harm to their health from unwanted doses of ionizing radiation from the MOX fuel that will be transported from the MFFF to the mission reactors over the same public highways the Petitioners’ members travel because of their close geographic proximity to the MFFF or the mission reactors. As the intervention petitions indicate, incident-free shipping of plutonium provides a dose of ionizing radiation, albeit small, to anyone next to the transport vehicle and a minor exposure to radiation, even one within regulatory limits, is sufficient to state an injury in fact. *See Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 247-48 (1996). Further, the asserted harm here — injury to the health and safety of Petitioners’ members from ionizing radiation — is clearly encompassed by the health and safety interests protected by the Atomic Energy Act.

Id., 54 NRC at 417.

Not only actual injury, but the threat of injury from radiation exposure is sufficient to satisfy the “injury in fact” requirement of traditional standing. *See Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 216 (2003) (“A threatened unwanted exposure to radiation, even a minor one, is sufficient to establish an injury.”). *See also, Duke Power Co. v. Carolina Environmental Study Group, Inc.*, 438 U.S. 59, 74 (1978).

A petition to intervene must provide information supporting the petitioner’s claim to

standing, including: (1) the nature of the petitioner’s right under the governing statutes to be made a party; (2) the nature of the petitioner’s interest in the proceeding; and (3) the possible effect of any decision or order on the petitioner’s interest. 10 C.F.R. § 2.309(d)(1).

To summarize, in determining whether an individual or organization should be granted party status “as of right,” the NRC applies judicial standing concepts that require a participant to establish: (1) it has suffered or will suffer “a distinct and palpable harm that constitutes injury-in-fact within the zone of interests arguably protected by the governing statute[s].” (*e.g.* in this case, the Atomic Energy Act of 1954 (“AEA”), 42 U.S.C. §§ 2011-2297; National Environmental Policy Act of 1969 (“NEPA”), 42 U.S.C. §§ 4321-4347; and Nuclear Waste Policy Act, 42 U.S.C. §§ 10101 *et seq.* (“NWPA”)); (2) the injury is fairly traceable to the challenged action; and (3) the injury is “likely to be redressed by a favorable decision.” *Georgia Institute of Technology* (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111, 115 (1995) (reciting standards for judicial standing). Standing will lie “where ‘a plaintiff demonstrates that the challenged agency action authorizes the conduct that allegedly caused the plaintiff’s injuries, if that conduct would allegedly be illegal otherwise.’” *Am. Trucking Ass’n v. Fed. Motor Carrier Safety Admin.*, 724 F.3d 243, 248 (D.C. Cir. 2013) (quoting *Animal Legal Def. Fund, Inc. v. Glickman*, 154 F.3d 426, 440 (D.C. Cir. 1998) (*en banc*)).

The Petitioners urge that ISP is not following the statutory and regulatory provisions of the AEA, NEPA and NWPA. The Petitioners oppose the ISP facility’s construction and operation, and, if they cannot attain the denial of an NRC license to ISP/WCS, Petitioners seek a more stringent regulatory regime governing the estimated 3,000 or more deliveries of spent nuclear fuel, GTCC waste, and the conduct of operational and decommissioning activities at the

WCS site. The attainment of tighter regulation would result in greater protections of the health and safety of Petitioners' members. Because Petitioners can show that their claimed actual or threatened injuries could be cured or ameliorated by some action of the Commission either to deny the license to ISP/WCS, or to impose conditions on a license, they have shown redressability. *Sequoyah Fuels Corp.* (Gore, Oklahoma, Site Decommissioning), CLI-01-2, 53 NRC 2, 14 (2001).

The organizational Petitioners' members, and Leona Morgan as an individual Petitioner, have all demonstrated individual standing based on actual or threatened injuries from transportation of radioactive waste to the ISP facility and/or the operations and decommissioning of the facility. Their claims to standing are not based solely on proximity to anticipated transport corridors or the ISP CISF, but also derive from facts showing injuries which would follow from the act of licensing the ISP CISF in violation of laws and regulations. *See, Duke Cogema Stone & Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), 54 N.R.C. 403 (2001).

C. Requirements for Organizational Standing

Showings of injury, causation, and redressability are necessary regardless of whether a petitioner is an individual, or an organization seeking to intervene in its own right. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998); *Georgia Tech Research Reactor*, CLI-95-12, 42 NRC 115.

A membership organization has standing to intervene as representative of its members by demonstrating that an individual member has authorized the organization to represent her interests. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26, 30-31 (1998); *Georgia Tech Research Reactor*, CLI-95-12, 42 NRC at 115. The

petitioning organization further must depict that the interests it seeks to protect are germane to its purposes and that neither the claim it asserts nor the relief it requests require the participation of an individual member in the proceeding. *Private Fuel Storage*, CLI-98-13, 48 NRC at 30-31; *Savannah River Mixed Oxide Fabrication Facility*, 48 NRC at 414.

In determining whether a petitioner has standing to intervene, a licensing board must construe the petition most favorably to the petitioner, regardless of whether an individual or organization. *Georgia Tech Research Reactor*, CLI-95-12, 42 NRC at 115; *U.S. Department of Energy (High Level Waste Repository)*, LBP-09-06, 11 (2006); *Savannah River Mixed Oxide Fuel Fabrication Facility*, LBP-01-35, 54 NRC 414; *Progress Energy Carolinas, Inc. (Shearon Harris Nuclear Power Plant, Units 2 & 3)*, LBP-08-21, 68 NRC 554, 559 (2008); *Tennessee Valley Authority (Bellefonte Nuclear Power Plant, Units 3 & 4)*, LBP-08-16, 68 NRC 361 (2008).

The organizational representative has standing when the interests at stake are germane to the organization's purpose. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181, 120 S.Ct. 693, 145 L.Ed.2d 610 (2000). Since guarding against potentially increased risks to public health, protecting individual members' health, and opposing environmental harms are germane to the missions of the 7 petitioning organizations, they have each demonstrated Article III organizational standing. The injury-in-fact in NEPA cases is not the consequence of the proposed federal action, but rather the "increased risk of environmental harm stemming from the agency's allegedly uninformed decision-making." *Sierra Club v. Corps of Engineers*, 446 F.3d 808 (8th Cir. 2006).

D. Non-Reactor Cases and 'Proximity-Plus' Standing

The ISP license application is a “non-reactor” case, so there is no presumption of standing based upon geographic proximity to the CISF. In non-reactor cases, the Commission applies a “proximity-plus” test, where a petitioner must show that the activity at issue involves geographical closeness to a “significant source of radioactivity producing an obvious potential for offsite consequences.” *Sequoyah Fuels Corp. and General Atomics* (Gore, Oklahoma Site), CLI-94-12, 40 NRC 64, 75 n.22 (1994). The case of *Shaw Areva MOX Services*, LBP-07-14 (2007) involved a license application for a mixed oxide fuel fabrication facility in South Carolina. The petitioners there submitted standing affidavits from members whose residences were within 20 to 32 miles from the facility site. The licensing board noted that the NRC Staff included residents as far away as 50 miles from the facility in its calculation of potential population doses. The *Shaw* decision suggests that a significant proximity radius is justified in cases involving large amounts of spent nuclear fuel, and cited *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-99-25, 50 NRC 25 (1999).

Here, the petitioning organizations’ members live, work and recreate near anticipated railroad, highway or barge routes along which canisters containing spent nuclear (SNF) and GTCC waste will be traveling. SNF and GTCC waste are inherently dangerous radiotoxic materials. Each transport canister will carry considerably more radioactivity (200 times or more) than was dispersed by the Hiroshima nuclear bomb. SNF “poses a dangerous, long-term health and environmental risk. It will remain dangerous ‘for time spans seemingly beyond human comprehension.’” *Nuclear Energy Inst., Inc. v. EPA*, 373 F.3d 1251, 1258 (D.C. Cir. 2004) (*per curiam*). Cesium-137, a very dangerous radioactive element if allowed to enter the atmosphere, is one of dozens of listed hazardous radioisotopes in SNF.

The harms and threats from SNF that are set forth by Petitioners' members, or reasonably inferable from their statements, include the potential for radiation exposures as a result of being physically stuck in traffic proximate to truck or rail loads of SNF; exposures to spills and water runoff from accidents or leakage from SNF transport vehicles; downwind airborne radioactive exposure from defective transport containers; and possible radioactive contamination of water resources from accidents.

ISP openly admits in the Environmental Report that there is a risk of radiologic injury:

- ER at 4-15 (noting that rail casks could release radioactivity in “exceptionally severe accidents”);

- ER at 4-24 (analysis of “damage to the transportation cask causing the release of radioactive materials” with dose risks “calculated estimating the radiation doses from both external and internally deposited radionuclides. . . .”).

- an accident scenario where there is “degradation or loss of the transportation cask’s lead shielding. . . [that] involves a severe impact coupled with a fire. . . .The shield would have to melt before the initial temperature of the cask would exceed the melting point of lead. The effects of such an accident would result in thinning of the lead shield in the section of the cask damaged by the impact. The thinning is modeled as a gap. For this type of accident to occur, the fire must be no more than 3 m from the cask.” ER p. 4-25.

Even the Continued Storage GEIS, which ISP relies upon for a generic bypass, “considered an accident scenario in which wind-borne missiles damage the concrete overpack of a dry cask” and “also considered an accident resulting in a dry cask leaking. . . .” “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel,” (NUREG-2157)

(2014) (“Continued Storage GEIS” or “GEIS”) at Executive Summary, p. lviii.

There is a heightened likelihood of an accident involving spent nuclear fuel near the ISP CISF because the surrounding railroads and highways are heavily used during the current West Texas oil and gas boom.¹ If there is a fire and leakage or surface radioactive contamination on a transport cask or vehicle, Cesium-137 could quite readily volatilize and escape with the smoke, driven by the heat. Radionuclides could be inhaled by emergency responders and members of the public, could be carried downwind as fallout, and could be ingested (via drinking water or contaminated food), and then lodge in and attack human muscle tissue, including the heart, lungs or thyroid gland. Cs-137 and other likely SNF isotopes must be respected in transport accidents, especially those involving fires and leaks into surface waters. It may be difficult to assess the threats of airborne or waterborne radiation from such events with precision, but the threats cannot be dismissed out of hand.

Petitioners have raised proper allegations of threatened harms and scenarios where the health and safety of their members could be impaired. Consequently, Petitioners have set forth legitimate facts of standing for organizations to serve as representatives of their members who are exposed to threatened harm from the ISP/WCS facility, resulting from the need for transport of SNF and GTCC waste to the CISF as part of ISP’s business plan.

E. Considerations of ‘Proximity-Plus’ in ISP’s Waste Transportation Scheme

Whether and at what distance from the radiation source a person can be presumed to be affected, and thus have legal standing, is judged on a case-by-case basis in NRC licensing cases,

¹See e.g., *New Mexico GOP Governor Hopeful: Toll Roads for Oil Traffic*, Associated Press, KTBS (Aug. 21, 2018) https://www.ktbs.com/news/business/newmexico-gop-governor-hopeful-toll-roads-for-oil-traffic/article_e8f4a10a-2542-5a9a-b64ed0e6448c7bc8html

taking into account the nature of the proposed action and the significance of the radioactive source. A petitioner must show both that he or she lives, works or recreates within a certain distance of the location of dangerously radioactive materials, but importantly, the petitioner does *not* have the burden of articulating a plausible means through which those materials could cause harm to him or her. It is the inherent dangers of the radioactive materials that create the obvious potential for offsite consequences. *U.S. Army Installation Command* (Schofield Barracks, Oahu, Hawaii, and Pohakuloa Training Area, Island of Hawaii, Hawaii), CLI-10-20, 71 NRC 216, 218 (2010), citing *USEC, Inc.* (American Centrifuge Plant), CLI-05-11, 61 NRC 309, 311 (2005). Spent nuclear fuel is high-level nuclear waste; it is inherently dangerous and holds “obvious potential for offsite consequences.”

**F. Regions of Influence Assumptions by the NRC and DOE
Support Legal Standing for Petitioners’ Challenge**

The Petitioner organizations seeking intervenor status have produced sworn declarations from members, who as a whole reside 17 miles or closer to likely rail, highway and/or barge routes for the transportation of SNF and GTCC waste to the WCS CISF.

(1) Rail, Highway and Barge Route Assumptions

Petitioners went to unusual lengths to identify likely rail, highway and even water shipment routes to Texas by which SNF and GTCC will be delivered to WCS. Figure 2.2-4 on p. 2-71 of the ISP Environmental Report is a national map of rail transportation routes. The transportation component from nuclear reactors to the WCS site in west Texas is expected to last 20 years and include at least 3,000 separate shipments, the final legs of which will be by rail. The Petitioners also reviewed many transportation route maps found in the record of the Yucca

Mountain NRC proceeding which are cited in the margin,² and for purposes of pursuing intervention in the WCS proceeding, presume that the most of the same routes will be used for transports to the WCS site. This is especially true the further away from the Southwest the shipments originate. Only at a certain point in their westward journeys would shipments diverge along different routes, whether bound for Yucca Mountain, NV, or WCS/ISP, TX. And 90% of the SNF shipments would originate east of the center line drawn down through the middle of the country. But even West Coast shipments would share identical or similar routes, up to a certain point, depending on the ultimate destination.

(2) The DOE Region-of-Influence (ROI) Standard in Yucca Mountain Proceedings

In the “Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, Volume I” (February 2002), the U.S. Department of Energy pronounced that the “region of influence for public health and safety along existing transportation routes is 800 meters (0.5 mile) from the centerline of the transportation rights-of-way and from the boundary of rail yards for incident-free (non-accident) conditions. The region of influence was extended to 80 kilometers (50 miles) to address potential human health and safety impacts from accident scenarios.” §§ 3.2.1, p. 3-119.

The spent nuclear fuel bound for the ISP CISF is identical to the SNF planned for deep repository burial. The Yucca ROI radius of .5 miles for incident-free transports, and 50 miles for

²<http://www.state.nv.us/nucwaste/news2017/115th%20Congressional%20Districts%207252017.pdf> (at page 3); <http://www.state.nv.us/nucwaste/news2017/State%20Maps.pdf>; <https://www.nirs.org/wp-content/uploads/factsheets/mibargefactsheet92804.pdf>; http://www.state.nv.us/nucwaste/news2017/pdf/Cities_Affected.pdf

accident scenarios, is directly analogous to the 20-year transport campaign planned by ISP.

(3) Continued Storage GEIS Uses 50-Mile ROI

The Nuclear Regulatory Commission, in its “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel,” (NUREG-2157) (2014) (“Continued Storage GEIS” or “GEIS”), uses a 50-mile radius to analyze for cumulative accident risks:

The geographic area considered in the cumulative accident risk assessment is an 80-km (50-mi) radius from an at-reactor or away-from-reactor storage facility. The cumulative analysis considers risk from potential accidents from other nuclear plants or storage facilities that have the potential to increase risks at any location within 80 km (50 mi) of the shutdown reactor or storage facility.

Id. at § 6.4.17, pp. 6-55 to 6-56. In addition, Appendix F of the GEIS is devoted to spent fuel pool fires and radiological leakage associated with pool damage, and forecasts consequences to human health and property damage out to a radius of 50 miles. *Id.* at pp. F-5 to F-7.

(4) NRC Proximity-Plus and Other Precedent Support
A Finding of Legal Standing for Petitioners’ Members

As previously observed, proximity to a large source of radioactive material may, in itself, be sufficient to establish the requisite interest for standing to intervene. Whether a petitioner’s stated concern is justified must be left for consideration when the merits of the controversy are reached. *Armed Forces Radiobiology Research Institute (Cobalt-60 Storage Facility)*, ALAB-682, 16 NRC 150, 152, 154 (1982) (petitioners lived three to five miles from water-shielded irradiation facility at National Naval Medical Center in Maryland holding 320,000 curies of radioactive cobalt-60 that allegedly were emitting gamma radiation; proximity to one of the U.S.’s largest radioactive cobalt inventories sufficed to establish petitioner's interest).

In *Georgia Institute of Technology (Georgia Tech Research Reactor, Atlanta, Georgia)*, CLI-95-12, 42 NRC 111 (1995), the Commission left undisturbed the ASLB’s finding that it was

“neither ‘extravagant’ nor ‘a stretch of the imagination’ to presume that some injury, ‘which wouldn’t have to be very great,’ could occur within ½ mile of the research reactor.” *Id.* at 117. *See also CFC Logistics, Inc.*, LBP-03-20, 58 NRC 311, 320 (2003) (petitioners residing from between one-third of a mile to three miles from a facility licensed to possess up to 1 million curies of cobalt-60 could rely on proximity presumption to establish their standing to intervene because of the quantity of radioactive material and its dangerousness).

Also, *see Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-15, 59 NRC 256, 257 (2004) (groups with members living at 2.5- and 4.9-mile distances, respectively, from the proposed facility “live in [such] close proximity to the proposed LES facility” that they would have an obvious potential to be affected by the facility). And in an earlier *LES* proceeding involving the proposed Claiborne Enrichment Center, the Licensing Board remarked that the petitioner (which had several members residing within 1 mile, in “close proximity” to the proposed facility) could rely on a “presumption of injury” from an “accidental release of fission products.” *See Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), Memorandum and Order (July 16, 1991) (unpublished) at 6.

Prior agency rulings regarding spent fuel pool expansion proceedings also supply some guidance. *Shearon Harris*, LBP-99-25, 50 NRC at 29-31 (petitioner seventeen miles from the facility at issue accorded standing); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), LBP-87-7, 25 NRC 116, 118-19 (1987); *id.*, LBP-87-17, 25 NRC 838, 842, *aff’d in part and reversed in part on other grounds*, ALAB-869, 26 NRC 13 (1987) (residence within ten miles of ISFSI [Independent Spent Fuel Storage Facility] found sufficient for standing); *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), LBP-88-10A,

27 NRC 452, 454-55 (1988), *aff'd*, ALAB-893, 27 NRC 627 (1988) (standing of individual living within 10 miles of ISFSI conceded by parties); *Millstone*, LBP-00-02, 51 NRC at 28 (standing granted individual with part-time residence located ten miles from ISFSI).

G. Conclusion: Petitioners Have Established Legal Standing

The 800 meter/50 mile ROI for health and safety analysis invoked by the U.S. Department of Energy in the Yucca Mountain Final Environmental Impact Statement, echoed by the NRC in the Continued Storage GEIS, should be accorded decisive weight. DOE is the applicant and prospective manager-overseer of the SNF to be delivered to Yucca, and DOE will occupy an analogous role in oversight and financial management of the ISP CISF (or even become the sole “customer”). The SNF projected for delivery to ISP is the identical material that would supposedly be shipped to a DOE deep repository from ISP’s CISF.

The NRC has recognized in non-reactor adjudications the use of radii of .5 mile to 17 miles as the basis for legal standing for public intervenors. The instant Petitioners have produced members living and/or working easily within 17 miles of various anticipated ISP shipping routes. Notably, the seventeen mile radius was around an independent spent fuel storage installation.

“Although the Commission has encouraged licensing boards to apply contemporaneous concepts of standing, the ultimate test is not whether the NRC’s test for standing conforms to that applied by federal courts, but whether the NRC’s test represents a reasonable construction of section 189a³. . . As long as the petitioners reside within an area that could realistically be

³*Envirocare of Utah v. NRC*, 194 F.3d 72, 75-76 (D.C. Cir. 1999).

impacted if an accidental release occurs, it is reasonable and consistent with section 189a⁴ to find that they have standing to challenge Applicant's safety claims and its environmental analysis under NEPA." *Calvert Cliffs 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-09-4, 69 NRC 170, 186 (2009).

The analogies between the Yucca and WCS transportation campaigns are obvious and valid. Petitioners have provided the requisite proofs from members to establish that they, as sponsoring organizations, should be accorded proximity-plus standing.

H. Identification of Intervenors and Their Qualifications

1. Don't Waste Michigan

Petitioner Don't Waste Michigan (DWM) is a 30-year-old grassroots association with members in southern and central Michigan. DWM is located at 2213 Riverside Drive NE, Grand Rapids, Michigan 48505. DWM has opposed various incarnations of nuclear energy, from commercial nuclear power plants to policy and practical plans for disposal of radioactive waste, and engages in public education and legal and administrative advocacy in licensing proceedings. DWM also supports measures to protect the health and safety of its members and the Michigan public from radiological injury.

During the height of the opposition in the 1990's to initiation of a low-level radioactive waste dump that was being forced on Michigan by federal law as a host state, Don't Waste Michigan turned out rallies of 3,000 to 5,000 persons on regular basis. Many of these persons identified themselves as Don't Waste Michigan members.

⁴Section 189a of the AEA provides for a hearing "upon the request of any person whose interest may be affected by the proceeding." 42 U.S.C. § 2239(a)(1)(A).

Presently, DWM has more than 60 members statewide, including many educators, and seeks in the present case to intervene on behalf of seven (7) of its members.

Michael J. Keegan resides in Monroe, Michigan. The Fermi 2 nuclear plant is 8 miles from his home. He studied Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, and discovered that the rail route spur into and out of Fermi 2 nuclear plant is within 6 miles of his home and from where he recreates. The rail spur going into and out of Fermi 2 nuclear plant is to meet a rail line shared by Norfolk Southern Railway, Canadian National Railway and CSX Transportation before heading north through Detroit, then west toward Plymouth. This route will be used to transport many cargoes of SNF and/or GTCC wastes to the WCS facility. In addition to the threat from Fermi 2 nuclear reactor, the Fermi 2 has on-site ISFSI for storage of SNF. Mr. Keegan's sole source of drinking water is from water intake pipes 1/4 mile and 1/2 mile from the Fermi 2 site. An accident with ISFSI SNF while loading for transport could be catastrophic, and could affect the entire Great Lake Erie and region. Mr. Keegan also worries about physical exposure in the event of a serious transport accident, sabotage or a terrorist attack on a shipment and believes that if there are airborne or waterborne emissions from a breached cask during transport that people in his neighborhood and household and he might be exposed to radiation and suffer health consequences and serious property damage.

Hedi Kaufman resides in Monroe County, Michigan. She has studied Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, and notes that the rail route spur into and out of Fermi 2 nuclear plant is within 2.5 miles of her home and where she recreates. The rail spur going into and out of

Fermi 2 nuclear plant is to meet the rail line shared by Norfolk Southern Railway, Canadian National Railway and CSX Transportation before heading north through Detroit then west toward Plymouth. This route will be used to transport many cargoes of SNF and/or GTCC wastes to the WCS facility. The Fermi 2 nuclear plant is 4 miles from Ms. Kaufman's home. In addition to the threat from Fermi 2 nuclear reactor, Fermi 2 has an onsite ISFSI. Ms. Kaufman's sole source of drinking water for family draws from water intake pipes 1/4 mile and 1/2 mile from the Fermi 2 site. An accident with SNF while loading could be catastrophic, and could affect the entire Great Lake Erie and surrounding region.

Martin R. Kaufman is Ms. Kaufman's spouse, and he, too, resides in Monroe County, Michigan. He has studied Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, and notes that the rail route spur into and out of Fermi 2 nuclear plant is within 2.5 miles of his home and where he recreates. The rail spur going into and out of Fermi 2 nuclear plant is to meet the rail line shared by Norfolk Southern Railway, Canadian National Railway and CSX Transportation before heading north through Detroit then west toward Plymouth. This route will be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility. The Fermi 2 nuclear plant is 4 miles from his home. In addition to the threat from Fermi 2 nuclear reactor, Fermi 2 has an onsite ISFSI. Mr. Kaufman's sole source of drinking water for family draws from water intake pipes located 1/4 mile and 1/2 mile from the Fermi 2 site. An accident with SNF while loading could be catastrophic, and impact the entire Great Lake Erie and region.

Jessie Pauline Collins resides in Redford, Michigan, literally a block from the City of Detroit. She has conducted some investigation into the pending licensing case and has learned

from examining Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case that a CSX rail line is less than 3 miles from her home and neighborhood and that this line is scheduled by the DOE to carry Fermi 2 SNF north and west through Detroit en route to Plymouth, passing within 3 miles of her home. Ms. Collins reasonably believes this same rail line will be used to transport SNF from southeastern Michigan to west Texas to ISP. As a senior person on a fixed income, her housing options are limited and she cannot move away from the rail line. Ms. Collins is concerned for her personal safety and that of others who live in her household from radiation exposure in the event of a serious transport accident, sabotage or a terrorist attack on a shipment. She worries that if there are airborne or waterborne emissions from a breached cask during transport that others living in her household and she might be exposed to radiation and suffer health consequences and serious property damage.

JoAnne Beemon resides in Charlevoix, Michigan. She has studied Department of Energy maps of rail and highway transportation routes, and notes that the Big Rock Point ISFSI and the heavy haul highway transport route by which transport away from the ISFSI would occur are both within two (2) miles of her home and place of business. This route will likely be used to transport several dozen, or more, cargoes of SNF and GTCC wastes from Big Rock Point to the IPS Consolidated Interim Storage Facility planned for Texas. Ms. Beemon is concerned about ISFSI cask loading failure possibilities as well as transportation accidents because of the proximity of her family's sole source of drinking water, Lake Michigan, which could be contaminated in the event of a cask loading or transport accident.

Alice Hirt is a resident of Holland, Michigan. She conducted some investigation into the

pending licensing case, including examination of Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case. She found that 453 barge transports via Lake Michigan routes are being considered for the first leg of transport of SNF to ISP's Texas site. Her home is 1/4 of a mile from the southeastern shore of Lake Michigan and her source of drinking water is Lake Michigan. Any barge shipment of SNF on Lake Michigan would impact the air that she breathes, and is contingent on wind direction. DOE maps indicate that such barge routes will likely be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility.

Maynard Kaufman lives near Bangor, Michigan. He has acquainted himself with details about the ISP storage proposal and has learned that nearly all of the planned deliveries of SNF and GTCC waste to IPS/WCS in Texas are planned to be via railroad. Mr. Kaufman has studied Department of Energy maps of rail and highway transportation routes, and notes that the CSX Transportation railway is less than one (1) mile from his home and places of recreation. This route will likely be used to transport several hundred cargoes of SNF and/or GTCC wastes from the Palisades nuclear power plant to the IPS CISF. In addition to the potential of SNF ISFSI cask loading failure at Palisades, he is concerned about transportation accidents along the way. The sole source of drinking water for Mr. Kaufman's family is drawn from the Great Lake Michigan, and the Palisades installation and ISFSI are along the lakeshore. As the crow flies, Mr. Kaufman resides within ten (10) miles of the Palisades nuclear reactor and its SNF ISFSI. He opposes any barging of nuclear waste on the Great Lake Michigan and all waterways elsewhere advocated by the 2002 DOE Yucca Mountain Environmental Report. Mr. Kaufman is concerned for his personal safety, and that of others who live in his household, from radiation exposure in the event

of a serious transport accident, sabotage or a terrorist attack on a shipment. He believes that if there are airborne or waterborne emissions from a breached cask during transport that those in his household and Mr. Kaufman, himself, might be exposed to radiation and suffer health consequences and serious property damage.

2. Citizens' Environmental Coalition

Citizens' Environmental Coalition was founded in 1970 around the time Love Canal in Western NY made headlines related to the irresponsible management of hazardous waste. Since that time CEC has actively educated and mobilized New Yorkers around key threats to members' health, public health and the environment, such as passage of hazardous waste legislation in New York and the cleanup of the West Valley nuclear waste site after the failed nuclear reprocessing experiment there. CEC has organized to close New York's aging nuclear reactors. The group also supports sound and sustainable energy alternatives such as efficiency and renewables, as well as the use of safer chemicals and green chemistry. CEC is concerned about the current careless planning to transport and store nuclear waste in conjunction with severe deficiencies in our national transportation infrastructure. The group works at the local, state and national levels, primarily with administrative agencies and other non-profit organizations, providing testimony and written comments and has approximately 5000 members. CEC is located at 422 Oakland Valley Rd., Cuddebackville, NY 12729. CEC has produced declarations from 6 of its members to establish standing in this licensing case.

CEC member Thomas Ellis resides in Albany, NY, 10 miles from a major railroad route which he identified after studying U.S. Department of Energy maps for the Yucca Mountain licensing case. He believes hundreds of casks of SNF and GTCC waste will be delivered tot the

ISP facility in west Texas using that rail route.

CEC member Linda DeStefano resides in Syracuse, NY, has studied Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, and notes that one or more railroad transport routes are within 5-10 miles of her home, place of work and place of recreation, and that such route will likely be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility.

CEC member Peter Swords lives in Syracuse, NY. He has studied U.S. Department of Energy maps for the Yucca Mountain licensing case his home is 2 miles from the major rail route that he identified on the maps that will be used to transport hundreds of casks of SNF and GTCC waste to ISP in Texas.

CEC member Charley Bowman resides in Getzville, New York and after studying U.S. Department of Energy maps for the Yucca Mountain licensing case, finds that he lives 8.2 miles from a major rail route on which he believes hundreds of casks of SNF and GTCC waste will be delivered across upstate New York to the ISP facility in Texas.

CEC member Joanne Hameister resides in East Aurora, NY, 15 miles from the major rail line she identified after studying U.S. Department of Energy maps for the Yucca Mountain licensing case. She believes hundreds of casks of SNF and GTCC waste will be delivered to the ISP site in west Texas using that route.

CEC member Lynda Schneekloth resides in Buffalo, NY and lives 1.5 miles from a major rail route she identified, after studying U.S. DOE maps compiled of rail transportation routes in the Yucca Mountain NRC licensing case, as being the likely corridor for transport of hundreds of cargoes of SNF and GTCC waste from eastern nuclear power reactors to ISP in Texas.

3. San Luis Obispo Mothers for Peace

San Luis Obispo Mothers for Peace (SLOMFP)⁵ is a non-profit organization based in California that historically has exposed and opposed the dangers posed by Diablo Canyon and other nuclear power reactors, nuclear weapons, and radioactive waste. The organization promotes peace, environmental and social justice, and renewable energy and supports measures to protect its members' health and public health in general from radiological injury. SLOMFP came together in 1969 to oppose the Vietnam War and to advocate for peace and in the early 1970's intervened in the Atomic Energy Commission licensing proceeding against the Diablo Canyon nuclear power plant. Currently the organization has 1,400 supporters and about 50 formal voting members. MFP has litigated the NRC's failure to comply with federal laws governing nuclear power and radioactive waste management before the agency as well as in the Ninth and the First U.S. Circuit Courts; has raised various management issues at Diablo Canyon before the California Public Utilities Commission; and pursues educational outreach via social media, speaking events, rallies, mailings, letter-writing campaigns, letters to editors and opinion pieces in newspapers.

SLOMFP has produced declarations from two of its members. Jane Swanson, resident of San Luis Obispo, CA, has studied Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, and notes that one or more rail transport routes are within 12 miles of her home and that such route will likely be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility. But it will be necessary to transport those wastes by heavy-haul truck from the Diablo plant to the railroad, and the

⁵SLOMFP's website is <https://mothersforpeace.org/>

intersection of the only road leading away from the Diablo Canyon plant to the Highway 101 freeway or its frontage roads is within three miles of her home, as verified by a map she has examined, located at the website of the San Luis Obispo County Office of Emergency Services.

SLOMPF member Jill ZamEk is from Arroyo Grande, CA and has acquainted herself with many details of the ISP CISF proposal, including the transport routes which will likely be used to transport dozens of cargoes of SNF and/or GTCC wastes from the Diablo Canyon nuclear plant to the ISP facility. The Diablo Canyon plant is approximately 12 miles from Ms. Zamek's home. If transport of SNF/GTCC from the plant is by rail, the only rail line for at least 10 miles in any direction from Diablo Canyon passes within 4 to 5 miles of her home. The major U.S. highway nearest the plant, on which truck transports of SNF/GTCC might occur, passes within 2 miles of her home. If the SNF/GTCC is loaded on a barge as part of the delivery to ISP, the barge loading area for Diablo Canyon is 10 miles from her home.

4. Public Citizen, Inc.

Public Citizen, Inc. is a nonprofit consumer advocacy organization that has championed the public interest in the halls of power since its founding in 1971. Public Citizen defends democracy, resists corporate power and works to ensure that government works for the people, and not for big corporations. The organization has 400,000 members and supporters throughout the country, does not participate in partisan political activities or endorse any candidates for elected office, and takes no government or corporate money. Public Citizen mobilizes activists to grow democratic movements, watchdogs Congress, sues the government when it fails to do its job, petitions regulatory agencies to safeguard the public and engages in cutting-edge research that effects change. Public Citizen's headquarters is located at 1600 20th Street NW,

Washington, D.C. 20009, and its Texas office is found at 309 East 11th St. Suite 2, Austin, Texas 78701.

Public Citizen represents three of its members. One is Petuuche Gilbert, who lives in the Pueblo of Acoma, New Mexico. After studying U.S. Department of Energy transport route maps for the Yucca proceeding, Mr. Gilbert learned that his home, his place of work, places of recreation and hospital all are within 1 mile from major rail and highway corridors over which he believes SNF and GTCC waste will be transported en route to ISP in west Texas.

Another member is Cemelli de Aztlan, a Mexican American and Native American, who lives with her daughter in El Paso, Texas. Ms. Azelan has investigated the pending WCS licensing case and upon learning that nearly all of the planned deliveries of SNF and GTCC waste to ISP are planned to be via railroad, studied the Rail Lines Map that appears at p. 2-71 of Revision 2 of the ISP Environmental Report as well as U.S. Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case. Ms. Aztlan says that a railroad line is within one (1) block of her home and believes it is likely that such route will likely be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility. She is concerned for her personal safety and that of her daughter from being subjected to radiation exposure.

The third Public Citizen member is Rev. James Caldwell, a minister in Houston, Texas. Rev. Caldwell is an African-American who has familiarized himself with the ISP proposed project. From examining the Rail Lines Map that appears at p. 2-71 of Revision 2 of the ISP Environmental Report, and Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, he found that he lives near a main

rail line approximately a mile from his home, and believes the railroad will likely be used to transport many cargoes of SNF and/or GTCC wastes to the ISP facility.

5. Citizens for Alternatives to Chemical Contamination

Petitioner Citizens for Alternatives to Chemical Contamination (CACC) is a grassroots environmental education and advocacy organization headquartered in central Michigan at 8735 Maple Grove Rd., Lake, MI 48632. CACC is dedicated to the principles of social and environmental justice, pollution prevention on behalf of preserving public health and the health of CACC's members, citizen empowerment, and protection of the Great Lakes ecosystem. CACC seeks to intervene on behalf of several of its members.

Connie Beauvais resides in Bath, MI, about four miles from the interchange of Interstate 69 and U.S. Highway 127. After studying U.S. DOE transportation maps, she found that a CSX Railroad and Conrail Railroad line near Lansing is within three (3) miles of her home and where she recreates. According to Ms. Beauvais, this route will be used to transport hundreds of cargoes of SNF and GTCC wastes to the ISP CISF, originating from Fermi 2 and Big Rock Point ISFSIs.

Chambre V. Beauvais resides in Bath, MI, about four miles from the interchange of Interstate 69 and U.S. Highway 127. After studying U.S. DOE transportation maps, he concluded that a CSX Railroad and Conrail Railroad line near Lansing is within three (3) miles of his home and where he recreates. According to Mr. Beauvais, this route will be used to transport hundreds of cargoes of SNF and GTCC wastes to the ISP CISF originating from Fermi 2 and Big Rock Point ISFSIs. He fears there could be accident-related radiation consequences for his family from SNF deliveries.

Nancy Ann Refior resides in East Lansing, Michigan. After studying U.S. DOE

transportation maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case, Ms. Refior noted that a CSX Railroad and Conrail Railroad line near Lansing is within two (2) miles of her home and where she recreates. This route will be used to transport hundreds of cargoes of SNF' and GTCC wastes to the ISP site, originating from the Fermi 2 ISFSI located south of Detroit. The wastes are slated to be transported first, north through Detroit and Lansing, at which point they will proceed on tracks to the west and south, toward Chicago. The same line also intersects with a rail line that will deliver SNF from the Big Rock Point ISFSI. Ms. Refior is concerned for her personal safety and that of others who live in her household from radiation exposure in the event of a serious transport accident, sabotage or a terrorist attack on a shipment.

John T. Benetti resides in Dimondale, Michigan. After studying U.S. DOE transportation maps, he learned that nearly all of the planned deliveries of SNF and GTCC waste to IPS/WCS are presently planned to be via railroad. He noted in his declaration that a CSX Railroad and Conrail Railroad line near Lansing is within three (3) miles of his home and where he recreates. This route will be used to transport hundreds of cargoes of SNF and GTCC wastes to the ISP/WCS site in Texas, originating from Fermi 2 and Big Rock Point ISFSIs.

6. Nuclear Energy Information Service

Nuclear Energy Information Service is a non-profit organization committed to ending nuclear power in this country and worldwide. Located at 3411 W Diversey Avenue, #13 Chicago, IL 60647, with over 200 members, NEIS educates, activates and organizes the public on energy issues; builds and mobilizes grassroots power and nonviolent opposition to nuclear power; and advocates sustainable and ecologically sound energy alternatives. Founded in 1981,

NEIS has consistently opposed nuclear power because of cost; resistance to effective regulation; unacceptable and unnecessary safety and health risk; the tremendous disasters it could cause and has caused; the release of radionuclides into the environment by less than diligent regulators; the environmental damage caused by every step of the nuclear fuel chain; long-lived radioactive wastes; and risks of a terrorist incident at a nuclear plant or at radioactive waste storage sites, and along proposed transportation routes.

Two members of NEIS have provided declarations. One is Joyce Harant, of Peoria, Illinois, who has looked over Department of Energy maps of rail and highway transportation routes for the Yucca Mountain proposal and notes that a major likely highway transport route is within 1/10 of a mile from her home. Given Peoria's geographical location southwest of Chicago, Ms. Harant is concerned that the highway route may be used to transport several thousand, or more, cargoes of SNF and/or GTCC wastes to the ISP facility.

The other NEIS declarant is Arlene Hickory, of Lake Bluff, Illinois, a Chicago suburb. She, too, reviewed Department of Energy maps of rail and highway transportation routes for the Yucca Mountain proposal and notes that a major railroad line and highway are within 2 miles of her home and that it may be used to transport cargoes of SNF and/or GTCC wastes to the ISP facility.

Joint Petitioners intend to submit 6 additional standing declarations from NEIS via the filing of an erratum in the near future because of technical difficulties in transmission of them to their counsel.

7. Sustainable Energy and Economic Development Coalition

The Sustainable Energy and Economic Development (SEED) Coalition is a grassroots

organization that has 2000 members, mainly in Texas, but some in New Mexico. Located at 605 Carismatic Lane, Austin, Texas, 78748, SEED Coalition advocates for clean air and clean energy, has promoted solar and wind development in Texas, while opposing coal plants and urging their retirement. SEED Coalition seeks to protect the health and safety of its members and the general public from radiological injury, and to advance that aim, in the past has participated in nuclear power plant licensing proceedings in opposition to Comanche Peak 3 & 4 and South Texas Project 3 & 4. SEED also historically opposed Waste Control Specialists' low-level radioactive waste facility, raising concerns including the proximity of groundwater to the pits in which radioactive waste is being disposed.

SEED seeks to intervene on behalf of three members. Brigitte Gardner-Aguilar lives in Eunice, New Mexico, about 5 miles from the ISP site. She has investigated the pending ISP license application, including review of Revision 2 of the Environmental Report, and Department of Energy maps of rail and highway transportation routes identified for the Yucca Mountain geological repository case. Ms. Gardner-Aguilar and her family live about 1.5 miles from railroad tracks that would be used to transport waste to the ISP site, and she crosses the tracks routinely as she travels to and from Hobbs, New Mexico where she attends nursing school. Ms. Gardner-Aguilar has particularly read the contents of page 2-3 of the ISP Environmental Report, which describe a "railroad loop" encompassing the ISP site that "is currently used to transport radioactive waste to the site." She notes that ISP proposes to deliver SNF shipments "routed eastward from Eunice, New Mexico to the CISF on the railroad loop which is controlled and maintained by ISP joint venture member Waste Control Specialists." She has seen rail deliveries of radioactive waste through Eunice on that line, and based on her familiarity with the ISP

complex, can confirm ISP's proposed delivery through Eunice and also the statement in the ER that "no highways or railroad lines cross the CISF site." She has viewed the maps showing rail access to the ISP CISF on Figures 2.2-4 and 2.2-5 of the ER, and of a proposed rail sidetrack into the CISF as shown in Figure 2.2-6, and confirms that those represent the only rail access to the site. Ms. Gardner is concerned for her personal safety and that of her family from radiation exposure in the event of a serious transport accident, sabotage or a terrorist attack on a shipment. She believes that if there are airborne or waterborne emissions from a breached cask during transport that she and her family might be exposed to radiation emissions and suffer health consequences and serious property damage.

Elizabeth Padilla is a SEED Coalition member who lives in Andrews, Texas and wishes to be represented in the ISP/WCS licensing proceeding. Andrews is county seat of the county where the ISP facility is located, 37 miles west of her home. Ms. Padilla has familiarized herself extensively with the ISP proposal by studying the Rail Lines Map appearing at pp. 2-71 and 2-72 of the ER. She often drives with family members past the WCS site toward Eunice, and then on to Hobbs, NM. She also drives southwest through Monahans, Texas en route to visit family in El Paso. Monahans is the site of a junction between a major east-west rail line and the Texas and New Mexico Railway line. The TNMR juts north out of Monahans, and is the only rail line that serves the ISP site. At Eunice the TNMR intersects at another rail junction with a short line some 4 or 5 miles to ISP. Ms. Padilla is concerned for her own health and safety, and that of her family, and concerned about airborne or waterborne radiation emissions that could affect them and their property in the Andrews area.

Patricia Golden is a SEED Coalition member in Van Horn, Texas. She has examined the

ISP license application papers and rail maps and notes that the rail line through Van Horn appears on a rail map in the license application. Van Horn is situated on the east-west rail line that travels east to Monahans, Texas, where it intersects with the Texas and New Mexico Railway line that runs north from Monahans, ultimately to the ISP site. The main line from Van Horn to Monahans lies 100 feet outside the rear door of Ms. Golden's workplace, so all rail shipments from west of ISP will pass 100 feet from her place of employment. Ms. Golden lives across town in Van Horn, just two blocks away from the same rail line. Ms. Golden has concerns about potential health and safety impacts that could result from an accident, vandalism or terrorist attack, and believes that she could be exposed to routine airborne radiation emissions from passing cargoes of SNF.

8. Leona Morgan

Leona Morgan is a Dine' Navaho who lives in Albuquerque, New Mexico. She has familiarized herself with the ISP application for a license from the NRC to construct and operate a CISF. She understands that essentially all of the planned deliveries of SNF and GTCC waste to ISP are presently planned to be via railroad. She has studied Figure 2.2-4 on p. 2-71 of the ISP Environmental Report, which is a national map of rail transportation routes, and notes that a main railroad line passes within 1 mile of her home and place of employment. It is a main route from California that passes through Arizona to Albuquerque. That route will likely be used to transport cargoes of SNF and/or GTCC wastes to the WCS facility. Ms. Morgan is concerned for her personal safety and that of others who live in her household from radiation exposure in the event of a serious transport accident, sabotage or a terrorist attack on a shipment, and believes that she may be exposed to routine radiation emissions if SNF casks become a normal cargo

delivered to ISP by way of Albuquerque and that she might experience more serious radioactive exposures and suffer health consequences and serious property damage in the event of an accident involving breach of a canister of SNF.

IV. OBJECTION: There Is No Federal Authorization for DOE Support for the ISP CISF And The License Application Must Be Dismissed

According to the August 29, 2018 Federal Register notice of this proceeding, the license application procedure is to be governed by 10 C.F.R. Part 72 and must further comply with the Nuclear Waste Policy Act, 42 U.S.C. §§ 10101 *et seq.*

ISP has made it clear from the start that it expects the U.S. Department of Energy (“DOE”) “would take possession of the fuel at the originating storage site and would retain possession of the fuel after it reached CISF.” NRC Memorandum, “Summary of June 16, 2015 meeting with Waste Control Specialists to discuss its approach of preparing the Environmental Report and the Safety Analysis Report,” ML 15182A322, p. 2 (July 1, 2015).

At its website, Interim Storage Partners asserts that “ISP proposed a license condition in its application [to the NRC] that obligates ISP to enter into an agreement that would ensure the interim storage of used nuclear fuel is properly funded by DOE.”⁶ “For consolidated interim storage of used nuclear fuel to become a reality, the key ingredient is no different than for permanent disposal: The federal government must take title to the waste and assume future liability.”⁷

⁶“Highlights of ISP CISF License Application,” <https://interimstoragepartners.com/project-overview/> (last accessed 10/23/2018).

⁷“Ownership and Liability Issues Associated With Consolidated Interim Storage of Used Nuclear Fuel,” <https://interimstoragepartners.com/project-overview/> (last accessed 10/23/2018).

In the cover letter WCS submitted with its license application to the NRC, WCS's vice-president of Licensing and Regulatory Affairs stated, "As specified in the license application, WCS anticipates that the U.S. Department of Energy (DOE) would take title to the SNF and transport it from existing storage sites across the U.S. to the CISF." Letter, J. Scott Kirk (WCS) to Mark Lombard (NRC), April 28, 2016, ML 16132A533.

In the ISP Environmental Report, Rev. 2, the company states:

ISP anticipates that the NRC would issue the Final Environmental Impact Statement (FEIS) and License by September 2020. Phase 1 construction would begin after issuance of the license and after ISP successfully enters into a contract for storage with the U.S. Department of Energy (DOE) or holders of the title to SNF at commercial nuclear power facilities (SNF Title Holder(s)).

(Emphasis original). ER § 1.0, p. 1-2.

WCS notes further, "The DOE or the SNF Title Holder(s) are is [sic] also responsible for the transportation of SNF from the shutdown and decommissioned reactors across the country."

(Emphasis original) ER § 3.2.1, p. 3-5. Later in the Environmental Report, WCS states, "The DOE or nuclear plant owner(s) holding title to the SNF will be responsible for transporting SNF from existing nuclear power plants to the CISF by rail in transportation casks licensed by the NRC pursuant to 10 CFR 71." (Emphasis original). ER § 4.2.4, p. 4-9.

Then, in the "Costs Analysis" section of the ER, ISP asserts:

However, prior to commencing construction, operation, and receipt of licensed material at the WCS CISF, ISP expects to enter into a contract(s) with DOE or the SNF Title Holder(s) that will provide the funding for facility construction, operation, and decommissioning.

(Emphasis original). ER § 7.3, p. 7-15.

On the very next page, ISP says this regarding startup financing:

The initial source of this funding for planning and permitting is ISP and other project

team members, including in-kind contributions of time and expertise. However, *ISP* would seek to recover these costs through a future contract with DOE *or the SNF Title Holder(s)*.

After receiving the license, the CISF's construction will begin to move forward, which will require the services of engineers and construction personnel. As the site is constructed, it will be necessary to ensure and confirm the quality of construction. The total cost for this phase is estimated to be approximately \$9.9 million, as derived from the 2009 EPRI report. As explained in the license application, funding of construction is expected to be primarily through a future contract with DOE *or the SNF Title Holder(s)*.

(Emphasis original). ER § 7.3.1, p. 7-16.

Concerning transportation and construction expenses, ISP maintains, "Under *ISP's* approach, DOE *or the SNF Title Holder(s)* would be responsible for transportation, including associated costs. As explained in the license application, funding of construction is expected to be primarily through a future contract with DOE *or the SNF Title Holder(s)*." (Emphasis original). ER § 7.3.2, p. 7-18.

And ISP admits this about garnering operating funds:

As explained in the license application, *ISP* will obtain funds to operate the CISF pursuant to a future contract with DOE *or the SNF Title Holder(s)*. *ISP* also intends to collect funds for the decommissioning of equipment, facilities, and land at the CISF pursuant to a future contract with DOE.

ER § 7.3.3, p. 7-21.

Neither 10 C.F.R. Part 72 nor the NWPA authorize an ISP CISF financed by means of having the DOE take title to the SNF and GTCC wastes and compensating the company for overseeing their management. The NWPA contemplates either an independent spent fuel storage installation ("ISFSI") only at a reactor site, (*see* 42 U.S.C. § 10152), or a monitored retrievable storage facility ("MRS") operated by the U.S. DOE, (*see* 42 U.S.C. § 10161).

Even charitably assuming that ISP appears to hold open the option of pursuing a Private

Fuel Storage-type privately-financed interim storage project, the NRC is being asked, in effect, to approve *two* applications, one that postulates a legal pathway to financing and decommissioning but is economically improbable; and one that lays out a legally impossible pathway and will produce a licensing nullity. The environmental impacts and implications of each option differ significantly. While ISP may describe and consider the alternative of a DOE-subsidized facility in the “alternatives” section of its ER, what the company does, instead, is to conceal the federally-subsidized version behind the improbable, but legally possible, option of private utility customers. ISP insists that the prerequisite to commencing the SNF undertaking involves firm arrangements for Federal largesse, replete with Federal absorption of all liability for spills, leaks, massive accidents and irradiation of people and the environment. But the company uses the decoy of theoretical private financing to gain consideration of its application.

If the federally-subsidized alternative were delineated as an alternative means of undertaking the project, it would have to be rejected as not lawfully authorized. By blurring distinctions between the two business models, ISP attempts to improperly gain serious licensing consideration of the unauthorized, federally-subsidized option. And the ruse is working. ISP should be required to disclose in its application papers all solicitations it has made to and responses it has received from, along with tentative agreements made with, private utility corporations to transport and store their wastes in Texas.

There is no provision within Nuclear Regulatory Commission regulations and the agency’s underlying organic statutes for a CISF wherein the U.S. Department of Energy assumes title and possession of the spent nuclear fuel and GTCC waste at the reactor sites, as described by ISP. There is no basis in federal law for an applicant to seek a construction and operation license

from the NRC for a facility that is not provided for by statute and regulation.

The Commission's implementation of the National Environmental Policy Act excuses the Nuclear Regulatory Commission from preparing a NEPA document on the WCS application. 10 C.F.R. § 51.10(a)(2) provides that "all agencies of the Federal Government shall comply with the procedures in section 102(2) of NEPA except where compliance would be inconsistent with other statutory requirements." There is no authority under either the Atomic Energy Act or the Nuclear Waste Policy Act, as amended, for the U.S. DOE to take title and/or possession of spent nuclear fuel and GTCC waste at reactor sites, in order to implement the ISP business plan. The NRC is excused from NEPA compliance as to the unlawful, unrealizable part of the ISP proposal.

Further, the NRC lacks subject matter jurisdiction over WCS's license application to the extent that it depends on having the U.S. DOE "take title to the SNF and transport it from existing storage sites across the U.S. to the CISF." Accordingly, Petitioners object and move for the dismissal and termination of this licensing proceeding.

V. CONTENTIONS

Pursuant to 10 C.F.R. § 2.309(f), a petitioner's contentions must: (1) provide a specific statement of the issue of law or fact to be raised or controverted; (2) provide a brief explanation of the basis for the contention; (3) demonstrate that the issue raised in the contention is within the scope of the proceeding; (4) demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding; (5) provide a concise statement of the alleged facts or expert opinions which support the petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with reference to

specific sources and documents on which the petitioner intends to rely; and (6) provide sufficient information to show that a genuine dispute exists with the licensee on a material issue of law or fact.

The burden on a petitioner in asserting contentions is not heavy. *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 359 (contention admissibility standards “insist upon some ‘reasonably specific factual and legal basis’ for the contention.” Petitioners are required only to “articulate at the outset the specific issues they wish to litigate.” *Id.* at 359.

The threshold admissibility requirements for contentions is not meant to serve as a fortress to deny intervention. *Power Authority of the State of New York, et al.* (James FitzPatrick Nuclear Power Plant; Indian Point Nuclear Generating Unit 3), CLI-00-22, 52 NRC 266, 295 (2000).

Contention 1: NEPA Analysis of Transportation of SNF and GTCC Wastes Was Excluded from the Application and Comprises Unlawful Segmentation of the Project

Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP states in the Application that “Transportation of the spent nuclear fuel shipping casks from the originating commercial nuclear reactor to the CISF. . . is not part of this License Application.” The exclusion from the ER—and by implication, from the EIS—of details and environmental impacts of a planned 20-year shipping campaign involving at least 3,000 deliveries of SNF and GTCC waste to ISP violates NEPA requirements that the transportation and storage aspects of the ISP plan be evaluated as a single, integrated project.

A. Basis for the Contention

ISP states in its License Application (ML 18206A483) that “Transportation of the spent nuclear fuel shipping casks from the originating commercial nuclear reactor to the CISF will be performed in accordance with 10 CFR 71 and the originating reactor licenses and is not part of this License Application.” *Id.* § 1.1, p. 1-3. ISP has thus severed—“segmented”—the indispensable transportation component of the project proposal from the storage component, contrary to the mandates underlying NEPA. Segmentation is impermissible for legal as well as practical reasons.

B. Facts Upon Which Petitioners Intend to Rely In Support of The Contention

The delivery of SNF and GTCC waste from nuclear reactors to ISP will be a major, complicated campaign, expected to last 20 years and to include at least 3,000 separate shipments transported, in the aggregate, hundreds of thousands of miles. Nearly all of the shipments will be by rail, but some cargoes of SNF will cross bodies of water, and some will take place via truck.

“For transportation of radioactive material from a nuclear power plant site, the affected environment includes all rural, suburban, and urban populations living along the transportation routes within range of exposure to radiation emitted from the packaged material during normal transportation activities or that could be exposed in the unlikely event of a severe accident involving a release of radioactive material. The affected environment also includes people in vehicles on the same transportation route, as well as people at truck stops and workers who are involved with the transportation activities.” “Continued Storage GEIS,” NUREG-2157, § 3.15, p. 3-38.

Because of the paucity of information ISP has provided in the ER and SAR about transportation, Petitioners have turned to two sources to assess the likely rail routes, which are expected to deliver 95% of the waste canisters: (1) transportation routes disclosed on maps

found in the record of the Yucca Mountain NRC proceeding;⁸ and (2) the map known as Figure 2.2-4 on p. 2-71 of the ISP Environmental Report, which identifies expected mainline rail routes by corporate ownership.

In order for Petitioners to meaningfully participate in the NEPA process, and for state and local government officials and emergency response personnel to comprehend the scope of this vast SNF shipping campaign, there must be complete disclosure of all probable transportation routes, along with quantities of SNF and the likely radioisotopic contents. This is necessary for several purposes: to determine whether Environmental Justice populations (people of color and low/moderate income people) may be disproportionately affected by shipments of SNF and GTCC waste; to ascertain whether there may be more efficient routing alternatives available; to determine the need for infrastructure upgrades or replacement actions on anticipated routes; and to promote assessments of risks to public health and property by those who will be asked to assume the burdens.

C. Failure to Address Planned Transportation in the ER Comprises a Legal Omission

The exclusion of disclosure and analysis of the transportation aspects of the ISP project creates a contention of omission. Where a contention alleges the omission of material information or an issue from an application, the contention remains a live controversy until and unless the information is later supplied by the applicant, which renders the contention moot.

Amergen Energy Co., LLC (Oyster Creek Nuclear Generating Station), LBP-06-16, 63 NRC 737,

⁸<http://www.state.nv.us/nucwaste/news2017/115th%20Congressional%20Districts%207252017.pdf> (at page 3); <http://www.state.nv.us/nucwaste/news2017/State%20Maps.pdf>; <https://www.nirs.org/wp-content/uploads/factsheets/mibargefactsheet92804.pdf>; http://www.state.nv.us/nucwaste/news2017/pdf/Cities_Affected.pdf

742 (2006). When a contention of omission has been met with provision of the missing information, the intervenor—if it wishes to raise specific challenges regarding the new information—may timely file a new contention that addresses the admissibility factors in 10 C.F.R. § 2.309(f)(1). *Oyster Creek*, LBP-06-16, 63 NRC at 744; *Entergy Nuclear Vermont Yankee, L.L.C. and Entergy Nuclear Operations, Inc.* (Vermont Yankee Nuclear Power Plant), LBP-05-24, 62 NRC 429, 431-32 (2005).

D. Failure to Address Transportation Impacts in the NEPA Document Comprises Unlawful Segmentation of the Project

The ISP storage facility in Texas cannot be separated from the need for physical delivery of SNF and GTCC waste to be delivered there in order for interim storage to take place. Separating consideration of the transportation component from the storage component breaks the project up into pieces—segments it—and consequently the overall project cannot be logically analyzed. “Segmentation is an attempt to circumvent NEPA by breaking up one project into smaller projects and not studying the overall impacts of the single overall project.” *Stewart Park & Reserve Coal., Inc. (SPARC) v. Slater*, 352 F.3d 545, 559 (2d Cir. 2003).

The “scope” of an EIS is defined as “the range of actions, alternatives, and impacts to be considered in an environmental impact statement.” 40 C.F.R. § 1508.25. The NRC regulation governing the scope of the EIS, (10 C.F.R. § 51.29(a)(1)), states that the agency should use the provisions of a CEQ regulation, 40 C.F.R. § 1502.4, for that purpose. Section 1502.4 in turn directs that

[a]gencies shall use the criteria for scope (§ 1508.25) to determine which proposal(s) shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.

40 C.F.R. § 1502.4(a).

The proposed subject of the EIS must include all “connected actions.” 40 C.F.R. § 1508.25(a)(1). The § 1508.25 definition of “connected actions” is adopted into 10 C.F.R. § 51.14(b). Under § 1508.25, separate actions are “connected” if, among other things, they “[c]annot or will not proceed unless other actions are taken previously or simultaneously,” or they “[a]re interdependent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1508.25(a)(1)(ii) and (iii). NRC’s NEPA regulations specifically adopt this definition, see 10 C.F.R. § 51.14(b). Thus, all connected actions as defined in § 1508.25 must be included within the scope of the proposed action evaluated in the NRC’s FEIS.

Moreover, according to 10 C.F.R. § 72.108, “The proposed ISFSI . . . must be evaluated with respect to the potential impact on the environment of the transportation of spent fuel, high-level radioactive waste, or reactor-related GTCC waste within the region.” The word “region” is not defined in 10 C.F.R. Part 72, but presumably it refers to the “region of influence” around ISP, which has a radius of 50 miles.

In general, NEPA case law defines “connected actions” as those that lack “independent utility. *See Soc’y Hill Towers Owners’ Ass’n v. Rendell*, 210 F.3d 168, 181 (3d Cir. 2000) (collecting cases); *Nw. Res. Info. Ctr. v. Nat’l Marine Fisheries Serv.*, 56 F.3d 1060, 1067–69 (9th Cir. 1995) (collecting cases); *Communities, Inc. v. Busey*, 956 F.2d 619, 627 (6th Cir. 1992) (same). Projects lack independent utility when it would be irrational, or at least unwise, to build one without the other. *Trout Unlimited v. Morton*, 509 F.2d 1276 (9th Cir. 1974). For example, the Ninth Circuit has held that the construction of a road to facilitate logging and the sale of timber from the logging were “connected actions” that had to be addressed in a single EIS.

Thomas v. Peterson, 753 F.2d 754, 758 (9th Cir. 1985). The court pointed out that “the timber sales cannot proceed without the road, and the road would not be built but for the contemplated timber sales.” *Id.*

The failure to include all connected actions within the scope of the proposed action is referred to as “segmentation.” “‘Segmentation’ or ‘piecemealing’ occurs when an action is divided into component parts, each involving action with less significant environmental effects.” *Town of Huntington v. Marsh*, 859 F.2d 1134, 1142 (2d Cir. 1988) (citing *City of W. Chicago v. NRC*, 701 F.2d 632, 650 (7th Cir. 1983)). “Segmentation is to be avoided in order to ‘insure that interrelated projects[,] the overall effect of which is environmentally significant, not be fractionalized into smaller, less significant actions.’” *Id.* (quoting *Taxpayers Watchdog, Inc. v. Stanley*, 819 F.2d 294, 298 (D.C. Cir. 1987)). The rule against segmentation is to “prevent agencies from dividing one project into multiple individual actions each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” *NRDC v. Hodel*, 865 F.2d 288, 297, 275 U.S.App. D.C. 69 (D.C. Cir. 1988) (internal quotation marks omitted).

Where an agency attempts to consider related actions separately by segmenting the mandated unified review into multiple independent analyses that insulate each project from the impacts created by its sister projects, it “fails to address the true scope and impact of the activities that should be under consideration” and therefore runs afoul of NEPA. *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014).

Once the NRC has properly defined the scope of the proposed action, including any connected actions, the agency’s EIS must evaluate the environmental effects of the proposed

action. 10 C.F.R. §§ 51.71(d), 51.90; 40 C.F.R. § 1508.25(a)(1). The NRC uses this information to “[d]etermine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs . . . whether the combined license should be issued, denied, or appropriately conditioned to protect environmental values.” 10 C.F.R. § 51.107(a)(3). “The EIS must address all reasonably foreseeable environmental impacts . . . even if the probability of such an occurrence is low.” *Blue Ridge Env'tl. Def. League v. NRC*, 716 F.3d 183, 188 (D.C. Cir. 2013) (citing 40 C.F.R. § 1502.22(b)).

By 10 C.F.R. § 51.14(b), the NRC incorporated the CEQ’s definition of “effects” found in 40 C.F.R. § 1508.8. Under the CEQ rule, effects include both direct effects, “which are caused by the action and occur at the same time and place,” and indirect effects, “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.”

The CEQ regulation further provides:

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.

40 C.F.R. § 1508.8.

When information relevant to a reasonably foreseeable environmental effect is incomplete or unavailable, CEQ regulations require an agency to obtain the unavailable information and include it in the EIS so long as the cost of doing so is not exorbitant. 40 C.F.R. § 1502.22(a). If the cost of obtaining the information is exorbitant, the agency must still include in the EIS a statement that the information is unavailable, the relevance of the unavailable information, a summary of existing credible scientific evidence, and the agency’s evaluation of the impacts that

might be caused. 40 C.F.R. § 1502.22(b).

The essential question and “proper test to determine relatedness under 40 C.F.R. § 1508.25(a)(1)(iii) is whether the project has independent utility.” *Coalition on W. Valley Nuclear Wastes v. Chu*, 592 F.3d 306, 312 (2d Cir. 2009) (quoting *Town of Huntington v. Marsh*, 859 F.2d 1134, 1142 (2d Cir. 1988)); *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006) (same). Projects have independent utility where “each project would have taken place in the other's absence.” *Webster v. U.S. Dep't of Agric.*, 685 F.3d 411, 426 (4th Cir. 2012). In addition, the segmentation of one phase of a larger project prior to the completion of the environmental review of the entire project constitutes impermissible segmentation if the component action has a “direct and substantial probability of influencing [the agency's] decision” on the larger project. *State of North Carolina v. City of Virginia Beach*, 951 F.2d 596, 603 (4th Cir.1991).

According to 10 C.F.R. § 51.45(b)(1), the Environmental Report must address impacts of the proposed action on the environment, and they “shall be discussed in proportion to their significance.” The transportation impacts of the overall ISP project are of high significance to completion of the storage project. There will be no transportation of waste to Texas if there is no CISF to receive it. The delivery of SNF and GTCC waste to Texas is essential to if there is to be a “consolidated” interim storage facility there.

By treating transportation as integral to the project, many adverse environmental effects which cannot be avoided can be properly addressed. 10 C.F.R. §51.45(b)(2). The adverse environmental effects from transport range from routine exposures to ionizing radiation, such as gamma and neutron radiation, of populations in the transport corridors where shipments will take

place via barge, truck and rail, to possible accident, sabotage or terrorism scenarios which might result in serious and large-scale radioactive releases, such as those accompanied by fire, submersion and external leakage into air and water. By excluding consideration of transportation effects, the difficult questions surrounding how ISP proposes to comply with the current DOE policy of repackaging fuel rods into smaller capsules cannot be addressed.

Also, the ISP policy of cherry-picking canisters to ship from reactor sites to the CISF cannot be properly analyzed to determine whether it will result in leaving thousands of fuel assemblies stranded at reactor site ISFSIs instead of consolidating them at ISP. Without including the transportation aspects of the project in the Environmental Impact Statement, the provision of accurate route information and notification of emergency responders in transportation corridors cannot be accomplished. Prospective arrangements for emergency responder training and provision of specialized equipment to handle radiological emergencies will be put off, perhaps for good. Without considering transportation effects, the fairness of exposing literally millions of people to routine radiation from passing trains carrying SNF, and to the potential for non-routine releases in major accidents or as a result of sabotage, cannot be examined.

Segmentation of the transportation of thousands of shipments of SNF and GTCC waste from the core activity of waste storage at ISP violates NEPA and must not be allowed.

Contention 2: ISP's 'Start Clean/Stay Clean' Policy Cherry-Picks Waste For Storage and Contradicts the Project's Purpose And Need Statement

Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

Interim Storage Partners states in its "Purpose and Need" statement that: "A CISF is

needed to ensure that the SNF at these commercial reactor sites can be safely removed so that the remaining lands can be returned to greenfield status.” ER § 1.1, p. 1-5. But the implementation of ISP’s plan contradicts its purpose and need statement.

Basis for the Contention

ISP’s ostensible management philosophy is belied by the company’s proposed implementation of it. ISP says that it will pursue a “start clean/stay clean” management philosophy:

The WCS CISF is designed as a “start-clean/stay-clean” facility. The spent fuel storage canisters are sealed by welding at the originating nuclear power plants to preclude any leakage of radionuclides. As a result of the “start-clean/stay-clean” operational design, incidental radioactive waste volumes generated by the WCS CISF operations are reduced to the extent practicable, in compliance with 10 CFR 72.24(f) and 10 CFR 72.128(a)(5).

SAR § 4.4.1.1, p. 4-15.

But apart from its statement of purpose and need, it is clear from review of the overall application that WCS will be aggregating less than 100%—and perhaps much less--of the SNF and GTCC waste at reactor sites for transport to, and storage at, the ISP facility in Texas.

Facts Upon Which Petitioners Intend to Rely In Support of The Contention

ISP made it clear from the outset that “NRC staff asked if a recovery plan for handling canisters identified as damaged or failed would be submitted as part of the application, and the applicant responded a recovery plan would not be submitted.” NRC Memorandum, “Summary of June 16, 2015 meeting with Waste Control Specialists to discuss its approach of preparing the Environmental Report and the Safety Analysis Report,” ML 15182A322, p. 2 (July 1, 2015). Further, ISP indicates in the SAR that some SNF and GTCC wastes will be left behind at participating reactor sites:

Spent nuclear fuel (SNF) characteristics are addressed in the individual canister/cask system structural evaluations which are provided in Appendices A.7, B.7, C.7, D.7, E.7, F.7 and G.7 and thermal safety evaluations which are provided in Appendices A.8, B.8, C.8, D.8, E.8, F.8 and G.8, for each canister/cask system. It is required that packages received at the WCS CISF are loaded in accordance with SAR and regulatory requirements applicable at the site where the SNF was originally loaded and stored. *To provide assurance that the packages received at the WCS CISF are acceptable for storage, prior to receipt of a canister, a records review is performed to verify that the canister being received was fabricated, loaded, stored and maintained in accordance with the Site Specific or General License requirements and will comply with WCS CISF License Conditions and Technical Specifications. In addition, a receipt inspection of the canisters is performed upon arrival at the WCS CISF, which includes a post transport package evaluation in accordance with reference [7-1].*

SAR § 7.2, p. 7-3 (Emphasis added). There is no explanation as to the disposition of canisters that are left behind at the sending reactor sites. The condition of the canisters at reactor sites will determine whether or not they will be shipped to WCS:

Regulatory Position 2d on control of airborne contaminants and gaseous radiation sources is not applicable because gaseous releases are prevented by the sealed canister design. No surface contamination is expected on the outer surfaces of the canister since process controls are maintained during fuel loading at the originating site.

SAR § 9.1.2, p. 9-5 (Emphasis added). Aggressive implementation of this policy will mean that problematic canisters will accumulate at reactor sites. ISP has told the NRC it will not be evaluating the reactor sites left holding stranded SNF for consequent environmental effects. NRC Memorandum, “Summary of June 16, 2015 meeting with Waste Control Specialists to discuss its approach of preparing the Environmental Report and the Safety Analysis Report,” ML 15182A322, pp. 1-2 (July 1, 2015).

There will be no canisters opened at WCS for any reason: “SNF and GTCC waste loading operations take place at the originating sites, not at the WCS CISF, and there is *no other handling of SNF or GTCC waste outside of canisters at the WCS CISF.*” SAR § 9.1.3, p. 9-6

(Emphasis added). When the canisters are delivered to the WCS site, they may be inspected to ensure their integrity and containment of the SNF and GTCC waste, but the cherry-picking of which canisters will be transported to WCS begins at the reactor sites:

As described in Section 7.2, it is required that packages received at the WCS CISF are loaded in accordance with SAR and regulatory requirements applicable at the site where the SNF was originally loaded and stored. *To provide assurance that the packages received at the WCS CISF are acceptable for storage, prior to receipt of a canister, a records review is performed to verify that the canister being received was fabricated, loaded, stored and maintained in accordance with the Site Specific or General License requirements and will comply with WCS CISF License Conditions and Technical Specifications. In addition, a receipt inspection of the canisters is performed upon arrival at the WCS CISF, which includes a post transport package evaluation in accordance with reference [11-2].*⁹

SAR § 11.5, p. 11-6 (Emphasis added).

So, SNF canisters will be left behind at reactor sites and there is no indication of the disposition to be made of them in ISP's application documents. WCS's policy of "start clean/stay clean" begins with cherry-picking canisters that have no obvious failures, are not structurally compromised, and have little to no external radiation present. The overall SNF storage scheme contemplated by ISP will divide storage responsibilities between reactor sites and ISP, and is radioactively dirty. WCS intends only that its acceptance of fewer than all SNF canisters will help it to remain "clean."

The National Environmental Policy Act requires identification and assessment in advance

⁹In the July 1, 2015 NRC Memorandum referenced above, the NRC Staff recorded a very different intention on WCS's part, to *not* inspect each incoming canister: "NRC staff asked if each canister would be inspected as part of the receipt inspection process. *The applicant responded they would likely inspect canisters if a transportation incident occurred.* NRC staff stated they felt it prudent to inspect the canisters which would be stored at CISF as part of the receipt inspection, and NRC staff also encouraged the applicant to explicitly identify at what point the Part 71 regulations would end and the Part 72 regulations would commence."

of the likely environmental impacts of the proposed actions, including federal authorization or permitting of private actions. Hence the totality of the proposed actions must be spelled out. NEPA's mandate, using notice and comment procedures, serves to ensure that (1) agency decisions include informed and careful consideration of environmental impact, and that (2) agencies inform the public of that impact and enable interested persons to participate in deciding what projects agencies should approve and under what terms. *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756-57, 768, 159 L.Ed.2d 60 (2004). NEPA serves those purposes by requiring federal agencies to take a “hard look” at their proposed actions' environmental consequences in advance of deciding whether and how to proceed. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-51, 104 L.Ed.2d 351 (1989).

An environmental report supporting a license application must contain a statement of the purposes of the proposed action. 10 C.F.R. § 51.45(b). WCS's supposed intention of “ensuring that the SNF at these commercial reactor sites can be safely removed so that the remaining lands can be returned to greenfield status” is not accomplished by its actual plan of leaving behind potentially significant quantities of wastes.

ISP's purpose and need statement is contradicted by this incomplete explanation of the fate of SNF and GTCC wastes at commercial power reactor sites. Without a comprehensive survey and identification of the precise quantities of SNF that will be moved to ISP and a detailed idea of what will remain behind, there is an inadequate basis to project how many noncompliant, troublesome and nonconforming canisters exist. This makes the enumeration of environmental effects of prolonged storage of stranded canisters impossible. After most of the nuclear waste has been transported away from the reactor sites, the remaining canisters may be

subjected to less oversight, maintenance and security. Their deteriorated or damaged conditions may not be noted nor remedied, such that when they finally are transported for disposal, they may pose greater dangers than would have earlier been present. ISP's plan fails of its aim of "consolidating" all the SNF and GTCC from each particular reactor site to which it provides services at its "consolidated" interim storage facility, for supposed security, stability, and sustained oversight.

In effect, ISP's version of "start clean/stay clean" sets up an unconsidered alternative. The implemented version of "start clean/stay clean" may represent a much lesser quantity of SNF consolidation than ISP's idealized description. NEPA requires that the environmental review must "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). The NRC guidance document, "Environmental Review Guidance for Licensing Actions Associated With NMSS Programs," NUREG-1748 (Accession No. ML032450279), sets this expectation:

The applicant/licensee should explain why the proposed action is needed. This section of the ER describes the underlying need for the proposed action and should not be written merely as a justification of the proposed action, nor to alter the choice of alternatives.

Id. at § 6.1.1. Here, the purpose and need statement is misleading and postulates an unconsidered and troubling aspect of the WCS plan. It is the purpose and need statement under NEPA that "necessarily dictates the range of 'reasonable' alternatives." *Carmel-by-the-Sea v. U.S. Dep't. of Transp.*, 123 F.3d 1142 (9th Cir. 1997). The purpose and need delineation must be "reasonable." *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190 (D.C. Cir. 1991). The statement of purpose and need under scrutiny is not reasonable, because it is unsupported by data and evidence. The NRC is not obliged to uncritically accept the applicant's statement of purpose and

need:

We have held that blindly adopting the applicant's goals is a "losing proposition" because it does not allow for the full consideration of alternatives required by NEPA. NEPA requires an agency to "exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project" and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.

ELPC v. NRC, 470 F.3d 676, 683 (7th Cir. 2006), quoting *Simmons v. Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997).

In preparing an EIS, an "agency need not foresee the unforeseeable, but . . . [r]easonable forecasting and speculation is . . . implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.'" *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092, 156 U.S.App. D.C. 395 (D.C. Cir. 1973). While the statute does not demand forecasting that is "not meaningfully possible," an agency must fulfill its duties to "the fullest extent possible." *Id.*

ISP's statement of purpose and need fails these tests. Either it should be restated to honestly reflect the reality that greenfield sites will not be the result of interim storage in Texas, or the proposed project must be redesigned to realize the stated purpose and need.

Contention No. 3: The Project Has Inadequate Assurances of Financing

Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP as a matter of fact and law has not provided reasonable assurance that it can or will obtain the necessary funds to cover the costs of construction, operation, maintenance and decommissioning of the CISF.

Basis for the Contention

WCS cannot demonstrate, as required by 10 C.F.R. § 72.22, that it either possesses the necessary funds, or that it has reasonable assurance of obtaining the necessary funds, or that by a combination of the two, it will have the necessary funds available to cover the construction, operation and decommissioning of the CISF.

Pursuant to 10 C.F.R. § 72.22(e), WCS is required to demonstrate “reasonable assurance” that it can fund the construction, operation and decommissioning of the CISF.¹⁰ But WCS has not demonstrated such “reasonable assurance” for several reasons.

Facts Upon Which Petitioners Intend to Rely In Support of The Contention

A. There Is No ‘Reasonable Assurance’ Where Financing Depends On DOE Taking Title

A SNF storage scheme dependent on having the U.S. Department of Energy take title and assume all liability at the nuclear reactor sites for SNF and paying WCS to transport and store the wastes is not reasonable because there is no legal means by which such an arrangement can be had.

In 2015, ISP’s position was that DOE would take title and liability: “When asked who would possess the fuel stored at CISF, NRC staff was informed that the Department of Energy

¹⁰10 C.F.R. § 72.22(e) Except for DOE, information sufficient to demonstrate to the Commission the financial qualifications of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the license is sought. The information must state the place at which the activity is to be performed, the general plan for carrying out the activity, and the period of time for which the license is requested. The information must show that the applicant either possesses the necessary funds, or that the applicant has reasonable assurance of obtaining the necessary funds or that by a combination of the two, the applicant will have the necessary funds available to cover the following:

- (1) Estimated construction costs;
- (2) Estimated operating costs over the planned life of the ISFSI; and
- (3) Estimated decommissioning costs, and the necessary financial arrangements to provide reasonable assurance before licensing, that decommissioning will be carried out after the removal of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste from storage.

would take possession of the fuel at the originating storage site and would retain possession of the fuel after it reached CISF.” NRC Memorandum, “Summary of June 16, 2015 meeting,” ML 15182A322, p. 2 (July 1, 2015). In its 2016 cover letter submitted with the WCS licensing application to the NRC, ISP/WCS stated unequivocally, “As specified in the license application, WCS anticipates that the U.S. Department of Energy (DOE) would take title to the SNF and transport it from existing storage sites across the U.S. to the CISF.” Letter, J. Scott Kirk (WCS) to Mark Lombard (NRC), April 28, 2016, ML 16132A533.

In the “Costs Analysis” section of the ER, WCS postulates: “However, prior to commencing construction, operation, and receipt of licensed material at the WCS CISF, *ISP* expects to enter into a contract(s) with DOE *or the SNF Title Holder(s)* that will provide the funding for facility construction, operation, and decommissioning.” (Emphasis original). ER § 7.3, p. 7-15. WCS does not indicate who or what entities might be “SNF Title Holders,” but the company’s intentions are now being expressed in a materially inconsistent way.

Now, WCS explains startup financing for construction this way:

The initial source of this funding for planning and permitting is *ISP* and other project team members, including in-kind contributions of time and expertise. However, *ISP* would seek to recover these costs through a future contract with DOE *or the SNF Title Holder(s)*.

After receiving the license, the CISF’s construction will begin to move forward, which will require the services of engineers and construction personnel. As the site is constructed, it will be necessary to ensure and confirm the quality of construction. The total cost for this phase is estimated to be approximately \$9.9 million, as derived from the 2009 EPRI report. As explained in the license application, funding of construction is expected to be primarily through a future contract with DOE *or the SNF Title Holder(s)*.

(Emphasis original). ER § 7.3.1, p. 7-16.

Concerning transportation and construction expenses, WCS now maintains, “Under *ISP*’s approach, DOE *or the SNF Title Holder(s)* would be responsible for transportation, including

associated costs. As explained in the license application, funding of construction is expected to be primarily through a future contract with DOE *or the SNF Title Holder(s)*.” (Emphasis original). ER § 7.3.2, p. 7-18.

WCS says this about garnering operating funds:

As explained in the license application, *ISP* will obtain funds to operate the CISF pursuant to a future contract with DOE *or the SNF Title Holder(s)*. *ISP* also intends to collect funds for the decommissioning of equipment, facilities, and land at the CISF pursuant to a future contract with DOE.

ER § 7.3.3, p. 7-21.

B. No Price-Anderson Coverage for Activities at the Site

ISP’s lack of insurance coverage also undermines its claims of reasonable assurance. The contemplated fiscal structure for the WCS CISF is not authorized by law, so the Price-Anderson Act, the nuclear insurance subsidy panacea, would not cover the project if constructed. This is because there is no legal authority for the DOE to assume title to/possession of the waste. Even if by legal legerdemain the NRC were to grant a license to WCS, it would theoretically confer Price-Anderson coverage only to the on-site operations of WCS, not the delivery of SNF and GTCC waste.

At its website, Interim Storage Partners admits that “ISP proposed a license condition in its application [to the NRC] that obligates ISP to enter into an agreement that would ensure the interim storage of used nuclear fuel is properly funded by DOE.”¹¹ There is no mention of private customers covering liabilities related to transport and storage of the SNF, but only ISP’s insistence that the federal government become directly involved.

¹¹“Highlights of ISP CISF License Application,” <https://interimstoragepartners.com/project-overview/> (last accessed 10/23/2018).

If DOE takes title at the reactor sites and WCS becomes the contract operator of the CISF, then Price-Anderson liability coverage would attach to transports of SNF and GTCC waste. Neither 10 C.F.R. Part 72 nor the NWPA contemplate a WCS-owned CISF financed by means of having the DOE take title to the SNF and GTCC wastes. The NWPA contemplates either an independent spent fuel storage installation (“ISFSI”) only at a reactor site per 42 U.S.C. § 10152, or a monitored retrievable storage facility (“MRS”) operated by the U.S. DOE per 42 U.S.C. § 10161.

Interim Storage Partners’ intention and objective, as expressed through its website right now, today, remains clearly focused *solely on DOE absorption of all expense and liability*: “For consolidated interim storage of used nuclear fuel to become a reality, the key ingredient is no different than for permanent disposal: The federal government must take title to the waste and assume future liability.”¹² These statements contradict and undermine the vague equanimity of ISP’s “either/or” financing language. There is an issue of fact between ISP’s license application representations, and ISP’s representations to the rest of the world—a world that includes Congress and the nuclear investment community. WCS will clearly not undertake construction or operation of the CISF without financial guarantees from the Department of Energy.

As part of the license application, WCS submitted to the NRC a draft NRC Form 558, “License for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste.”¹³ Paragraphs 23 and 24 of the draft license state as follows:

¹²“Ownership and Liability Issues Associated With Consolidated Interim Storage of Used Nuclear Fuel,” <https://interimstoragepartners.com/project-overview/> (last accessed 10/23/2018).

¹³“Interim Storage Partners LLC License Application,” pp. 35-37/114 of .pdf. ML 18206A483.

23. Prior to commencement of operations, the Licensee shall have an executed contract with the U.S. Department of Energy (DOE) *or other SNF Title Holder(s)* stipulating that the DOE *or the other SNF Title Holder(s)* is/are responsible for funding operations required for storing the material identified in 6.A, 6.B, 7.A or 7.B at the CISF as licensed by the U.S. Nuclear Regulatory Commission.

24. Prior to receipt of the material identified in 6.A, 6.B, 7.A or 7.B, the Licensee shall have a financial assurance instrument required pursuant to 10 CFR 72.30 *acceptable to* the U.S. Nuclear Regulatory Commission or an executed contract with DOE guaranteeing decommissioning funds will be provided for use by the Licensee.

(Emphasis original). “Interim Storage Partners LLC License Application,” p. 37/114 of .pdf. ML 18206A483.

But this expression of intention is belied directly by ISP’s request for exemption from having to produce any financial assurance at all. At § 1.7.1 of its Application (ML 18206A483), WCS requests an “Exemption from 10 C.F.R. § 72.30 Requirements” as follows:

ISP requests an exemption from the requirements specified in 10 CFR 72.30 Financial Assurance and Recordkeeping for Decommissioning. ISP is providing an alternative method of financial assurance that will guarantee the necessary funding for decommissioning the CISF authorized to store the material defined in Conditions 8A and 8B of the license that is equivalent to the provisions of 10 CFR 72.30(e).

ISP is seeking a contract with the DOE that shall guarantee decommissioning funds will be provided for use by ISP. This contract shall require the DOE to pay the actual costs of decommissioning the facilities, equipment, storage systems, and land used to store the material at the CISF.

In the event that the DOE does not enter into a contract to specifically guarantee that the funds shall be available for use by ISP to decommission said facilities, equipment, and land, then ISP shall have one of the financial assurance instruments, specified in 10 CFR 72.30(e), as specifically approved by the NRC, prior to receipt of SNF at the CISF, as a condition of the license. Proposed license conditions are provided in Attachment A of this License Application.

Pursuant to 10 CFR 72.7, Specific Exemptions, the NRC may upon application by an interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in 10 CFR 72 as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

An exemption from § 72.30 based on the hope that ISP/WCS can enter into a contractual

arrangement with the DOE guaranteeing decommissioning funds from the Federal fisc is not an exemption “authorized by law.” That portion of the exemption request is impossible to grant.

Of some moment though, is that ISP is actually seeking an exemption from having to divulge any particulars required by § 72.30(e) within the licensing application. ISP seeks exemption from disclosure of *any* decommissioning financing arrangements because it is “seeking a contract that shall guarantee decommissioning funds will be provided for use by ISP.” But ISP further pledges, contingently, that if “DOE does not enter into a contract to specifically guarantee that the funds shall be available for use by *ISP* to decommission said facilities, equipment, and land, then *ISP* shall have one of the financial assurance instruments, specified in 10 CFR 72.30(e), as specifically approved by the NRC, prior to receipt of SNF at the CISF, as a condition of the license.” The effect of an exemption for WCS would be to allow it to wait until an indefinite time in the future—not now, in 2018 during the adjudication of the application—before WCS would be required to prove up a genuine guarantee covering decommissioning expense. Section 72.30(b) requires that “Each holder of, or applicant for, a license under this part must submit for NRC review and approval a decommissioning funding plan. . . .” Read in context, the decommissioning funding plan must be presented *now*, as part of the licensing application. But ISP seeks to dispense until a vague future time (presumably after the license has already been granted by the NRC) with the responsibility of production of prepayment or proof of a surety bond or a self-guarantee of financial responsibility.

The suspect nature of this exemption request may be related to the requirements of 10 C.F.R. Appendices A, C and D to Part 30, which delineate alternate financing methods imposed by 10 C.F.R. § 72.30(e)(2). Prepayment as a guarantee is authorized by 10 C.F.R. § 72.30(e)(1).

The requirements for a surety bond or self-coverage include, for starters, a “[t]angible net worth of at least \$21 million, and total net worth of at least 10 times the amount of decommissioning funds being assured by a self-guarantee for all decommissioning activities for which the company is responsible as self-guaranteeing licensee and as parent-guarantor. . . [and] Assets located in the United States amounting to at least 90 percent of total assets or at least 10 times the total current decommissioning cost estimate. . . .” Compliance with these and other obligatory terms may pose problems for ISP, which is 51% owned by the foreign corporation, Orano.

The NRC requires exceptional circumstances to grant exemptions. “Exceptional circumstances” comprise a discretionary administrative finding. The reasoned exercise of such discretion should take into account the equities of each situation, such as the stage of the facility’s life, any financial or economic hardships, any internal inconsistencies in the regulation, the applicant’s good faith effort to comply with the regulation from which the exemption is sought, the public interest in adherence to the Commission’s regulations, and the safety significance of the issues involved. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-8, 19 NRC 1154, 1156 n.3 (1984); *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-84-45, 20 NRC 1343, 1376-1377 (1984). The public interest criterion for granting an exemption from 10 C.F.R. § 50.10 under 10 C.F.R. § 50.12(b), which is analogous to 10 C.F.R. § 72.7 under which ISP’s exemption request was made, is stringent: exemptions of this sort are to be granted sparingly and only in extraordinary circumstances. *United States Dep’t of Energy, et al.* (Clinch River Breeder Reactor Plant), CLI-82-23, 16 NRC 412, 426 (1982), citing *Washington Public Power Supply System* (WPPSS Nuclear Power Projects Nos. 3 & 5), CLI-77-11, 5 NRC 719 (1977).

The financial provisions are content requirements imposed on applicants for NRC licenses, which means this contention is indisputably within the scope of this proceeding. Since the truthful and accurate provision of the financing information may persuade the NRC to grant the requested license, this issue is material to the findings the NRC must make. Under § 186(a) of the Atomic Energy Act, 42 U.S.C. § 2236(a),¹⁴ the test for materiality is whether the information is capable of influencing the decisionmaker, not whether the decisionmaker would, in fact, have relied on it. Determinations of materiality require careful, common sense judgments of the context in which information appears and the stage of the licensing process involved. *Consumers Power Co.* (Midland Plant, Units 1 & 2), ALAB-691, 16 NRC 897, 910 (1982), citing *Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480 (1976), *aff'd sub nom. Virginia Elec. & Power Co. v. NRC*, 571 F.2d 1289 (4th Cir. 1978).

Reasonable assurance “is not susceptible to formalistic quantification or mechanistic application. . . .” Compliance with the Commission’s regulations is a touchstone for reasonable assurance. *AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-07-17, 66 NRC 327, 340 (2007), *aff'd*, CLI-09-07, 69 NRC 235, 263 (2009) (rejecting an argument that reasonable assurance should be quantified with 95% confidence). “Reasonable assurance” means that the applicant must have a reasonable financing plan in light of relevant circumstances. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-78-1, 7 NRC 1, 18

¹⁴“Any license may be revoked for any material false statement in the application or any statement of fact required under section 182, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Commission to refuse to grant a license on an original application, or for failure to construct or operate a facility in accordance with the terms of the construction permit or license or the technical specifications in the application, or for violation of, or failure to observe any of the terms and provisions of this Act or of any regulation of the Commission.”

(1978). “Reasonable financial assurance for an ISFSI applicant is provided through reasonable cost estimates based on plausible assumptions and forecasts. Assumptions seriously at odds with governing realities will not be acceptable. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-05-21, 62 NRC 248, 298-99 (2003).

ISP’s proposed financial arrangements are merely wishful; they are not lawful. The firm has not provided information sufficient to show that it either possesses the necessary funds, nor does it have reasonable assurance of obtaining the necessary funds, nor can ISP show that by a combination of the two, that it will have the necessary funds available to cover the costs of construction, operation and decommissioning of the proposed CISF.

**Contention 4: Low-Level Radioactive Waste Volumes
And Repackaging Requirements Are Considerably Underestimated**

The ISP Environmental Report significantly underestimates the volume of low-level radioactive waste (“LLRW”) that will be generated by the interim storage project. ISP fails to count irradiated concrete and other materials toward the gross total volumes of LLRW. ISP further fails to acknowledge and properly quantify LLRW volumes resulting from mandatory repackaging of SNF and GTCC waste, at least some of which will occur at the WCS site to meet likely DOE requirements for transportation, aging and disposal (“TAD”) canisters to be delivered to the final geological repository. ISP provides an incomplete perspective of the waste management obligations at the CISF as well as the financial burdens arising from creation, oversight and disposition of thousands of additional tons of LLRW. This truncated perspective in turn has caused a seriously inaccurate picture of the true costs of constructing, operating and decommissioning the WCS CISF.

Basis for the Contention

ISP seriously underestimates the nature of its pre-disposal responsibilities (*i.e.*, pre-repository responsibilities) for SNF/GTCC waste, which it expects the U.S. Department of Energy to take title and possession to at the reactor sites. Consequently, despite arguing the minimal generation of LLRW based upon the “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel,” (NUREG-2157) (2014) (“Continued Storage GEIS” or “GEIS”), unrecognized circumstances will greatly affect the LLRW volume and cost picture. Further, the concrete pads on which the waste will sit for decades are not recognized as a major contributor to LLRW volumes.

Facts Upon Which Petitioners Intend to Rely In Support of The Contention

WCS describes the solid low-level radioactive waste (“LLRW”) situation at the proposed CISF in two short sections of the Environmental Report:

The CISF would be designed, and procedures developed, to minimize the volumes of solid LLRW generated at the CISF in accordance with 10 CFR 20.1406, *Minimization of Contamination*, and 10 CFR 72.130, *Criteria for Decommissioning*.

Solid radioactive wastes may be generated at the CISF as a result of cask contamination surveillance and decontamination activities. These wastes generally consist of paper or cloth swipes, paper towels, protective clothing, and other job control wastes contaminated with low levels of radioactivity. Expended HEPA filters from the transfer facility ventilation system along with job control waste associated with filter change-out, also may contribute to the generation of solid radioactive waste. Job control waste generated during filter change-out is collected and monitored along with other low-level wastes for off-site processing.

Solid radioactive wastes would be collected in containers and temporarily stored in the transfer facility. Small volumes of solid radioactive wastes are anticipated. These low activity wastes would be disposed of at *Waste Control Specialists’* permitted or licensed disposal facility

ER § 3.12.1.3.1, p. 3-83.

Only very small quantities of solid LLRW are expected to be generated at the CISF. Solid waste containing low levels of radioactivity would be generated as a result of the decontamination or removal of residual contamination that may potentially be present on transportation casks received at the Transfer Building. Radiological surveys would

also be performed on any equipment or items that would be released from the CISF in accordance with Regulatory Guide 1.86 (RG-186), *Termination of Operating Licenses for Nuclear Reactors*. Radioactive waste generated at the CISF, including items or equipment that exceed the criteria specified in RG-186 would be disposed of as low-level radioactive materials at a *Waste Control Specialists'* licensed or permitted facility.

ER § 4.13.3, p. 4-61.

A. Repackaging the SNF Waste Poses Unconsidered Management Difficulties, Increased Waste Generation, and Unforeseen and Undisclosed Costs

It is obligatory that WCS's responsibility for repackaging SNF and GTCC waste at the reactor sites and/or at the WCS CISF—complicated by the presence of high-burnup fuel (“HBF”) be recognized and the facts detailed and disclosed in the NEPA document, which is not presently the situation.

The DOE's need to package SNF and GTCC waste into smaller uniformly-sized, multipurpose transport, aging and disposal (“TAD”) canisters for purposes of geological repository disposal poses a number of unconsidered management, waste generation and cost issues which are inadequately addressed within the license application.

There are at present zero approved transport canister types to haul the SNF from reactor sites to anticipated geological repository disposal. DOE's underlying objective for requiring uniformly-constructed transportation, aging and disposal canisters (“TADs”) is efficiency and safety: the SNF must fit into limited space within the repository in order to control the thermal load that will emanate for centuries from the disposed canisters into the surrounding geological layers of the Earth. The fuel bundles from different reactor types vary greatly in thermal content and as to whether or not they are now considered “high burnup fuel” (“HBF”). Presently there is no agreement on the size nor other features of the TAD canisters to achieve the DOE's efficient disposal requirements.

This problem became the subject of supplementation of the Yucca Mountain Final Environmental Impact Statement. In 2006, DOE published a notice of intent to supplement in the Federal Register that said:

Since publication of the Yucca Mountain Final EIS, DOE has continued to develop the repository design and associated plans. *As now planned, the proposed surface and subsurface facilities would allow DOE to operate the repository following a primarily canistered approach in which most commercial spent nuclear fuel would be packaged at the commercial sites in multipurpose transport, aging and disposal canisters (TADs), and all DOE materials would be packaged in disposable canisters at the DOE sites. Waste packages would be arrayed in the repository underground to achieve what is referred to as a higher-thermal operating mode, and most spent nuclear fuel and high-level radioactive waste would arrive at the repository by rail.*

(Emphasis added). 71 Federal Register 60490 (October 13, 2006).¹⁵

In the resulting “Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, Vol. I¹⁶ (2008)” (“Yucca SEIS”), the DOE stated:

In 2006, DOE proposed a modified approach to repository design, development, and operation. Central to this proposed approach is the use of a canister concept for commercial spent nuclear fuel that minimizes handling of individual spent fuel assemblies; limits the need for complex surface facilities; and simplifies repository design, licensing, construction, and operation. DOE would use a TAD canister to transport, age, and dispose of commercial spent nuclear fuel without ever reopening the canister, thereby simplifying and reducing the number of handling operations involved in the packaging of spent nuclear fuel for disposal. In addition, the canistered approach offers the advantage of the use of practices that are familiar to the nuclear industry and the NRC, which would make the repository easier to design, license, construct, and operate. Although DOE has a small amount of spent nuclear fuel of commercial origin that it could ship to the repository uncanistered in a cask, consistent with the analysis in the Yucca Mountain FEIS, this Repository SEIS assumes that it would transport and receive all DOE spent nuclear fuel and high-level radioactive waste in disposable

¹⁵<https://www.nrc.gov/docs/ML0927/ML092710174.pdf>

¹⁶<https://www.energy.gov/sites/prod/files/EIS-0250-S1-FEIS-01-2008.pdf>

canisters. On October 13, 2006, in the Notice of Intent to prepare “Supplement to the Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, NV” (71 FR 60490), DOE announced that it would prepare a supplement to the Yucca Mountain FEIS to evaluate potential environmental impacts of the modified repository design and operational plans. *In its Notice of Intent, DOE described the primarily canistered approach whereby most commercial sites would package their spent nuclear fuel in TAD canisters, and all DOE materials would be packaged in disposable canisters at DOE sites.*

Id. at p. 1-5 (Emphasis added).

Consequently, the DOE’s present approach is described as follows:

As now proposed, DOE would use a primarily canistered approach to operate the repository; under this approach, *most commercial spent nuclear fuel would be packaged at the reactor sites in TAD canisters.* DOE would repackage commercial spent nuclear fuel that arrived in packages other than TAD canisters into these canisters in newly designed surface facilities at the repository. The Department would package essentially all DOE material in disposable canisters at the DOE sites. Most spent nuclear fuel and high-level radioactive waste would arrive at the repository by rail. Some shipments would arrive by truck. At the repository, DOE would place the TAD and other disposable canisters in waste packages that were manufactured from corrosion resistant materials. DOE would array the waste packages in the subsurface facility in tunnels (emplacement drifts).

Id. at § 1.4.2, p. 1-14 (Emphasis added).

But ISP clearly contemplates none of this. The firm plans merely to take on SNF delivered in a transport cask from the currently-available designs:

ISP would use existing dry cask storage systems currently used at several operating commercial nuclear power plants in the U.S. and abroad. These dry cask storage systems store SNF inside of sealed canisters instead of in a spent fuel pool. These dry cask storage systems are safe and confine radioactive materials, thereby minimizing the potential release of radioactive contamination into the environment.

The dry cask storage systems that would be employed at the CISF are currently licensed by the NRC in accordance with 10 CFR Part 72 and therefore comply with the NRC requirements for the independent storage of SNF.

ER § 1.2, pp. 1-6 to 1-7. However, the new DOE policy will require most casks slated for disposal to be repackaged either at the reactor sites or at the CISFs. Upon repackaging, the

canisters from which the SNF was removed instantly become low-level radioactive waste. All of the casks anticipated for transport use to ISP will become LLRW unless a uniform TAD design is accepted and placed into use throughout the industry for canistering waste at the reactor sites, prior to delivery to ISP's CISF in TX.

Petitioners' expert on CISF management and fiscal matters is Robert Alvarez. Mr. Alvarez is a former senior policy adviser to the Secretary of Energy and deputy assistant secretary for national security and the environment from 1993 to 1999, and presently is a senior scholar at the Institute for Policy Studies. In 2003 he co-authored an extensive report on reducing the storage hazards of spent power reactor fuel in the United States which has largely been corroborated in subsequent reviews by the National Research Council. A report from Mr. Alvarez has been filed in support of this Petition.

Regarding the repackaging conundrum, Mr. Alvarez states:

Dry cask storage systems are either single purpose (storage only) or dual purpose (storage and transportation). None are currently licensed for disposal. "Direct disposal of the large canisters currently used by the commercial nuclear power industry is beyond the current experience base globally," a 2013 DOE study observes, "and represents significant engineering and scientific challenges."¹⁷ A 2013 report by the staff of the Nuclear Waste Technical Review Board concludes, "repackaging the SNF may be a lengthy process and could impact operational schedules at the utility sites, at a consolidated storage facility, or at the repository, depending on where repackaging is performed."¹⁸ It's not out of the question that if DOE assumes title for spent nuclear fuel

¹⁷Alvarez cites U.S. Department of Energy, Office of Nuclear Energy, Task Order 12: Standardized Transportation, Aging, and Disposal Canister Feasibility Study, June 14, 2013. https://curie.ornl.gov/system/files/documents/not%20yet%20assigned/STAD_Canister_Feasibility_Study_AREVA_Final_1.pdf

¹⁸Alvarez cites U.S. Department of Energy, Nuclear Waste Technical Review Board, Staff Briefing Document, Framework for the Technical Workshop on the Impacts of Dry-Storage Canister Designs on the Future Handling, Storage, Transportation, and Geologic Disposal of Spent Nuclear Fuel in the United States, Washington, DC, November 18–19, 2013. <http://www.nwtrb.gov/meetings/2013/nov/framework.pdf>

for a pilot consolidated interim storage facility it may elect to do detailed development of repackaging as recommended by some in the nuclear industry.¹⁹

In 2012, Energy Department researchers concluded that “waste package sizes for the geologic media under consideration...are significantly smaller than the canisters being used for on-site dry storage by the nuclear utilities.”²⁰ A nuclear industry study concluded in 2014 that “casks and canisters being used by the power utilities will be at least partially, and maybe largely, incompatible with future transport and repository requirements, meaning that some if not all, of the [used nuclear fuel] that is moved to dry storage by the utilities will ultimately need to be repackaged.”²¹ Existing large canisters can place a major burden on a geological repository, such as: handling, emplacement and post closure of cumbersome packages with higher heat loads, radioactivity and fissile materials. Repackaging expenses rely on the transportability of the canisters, but more importantly on the compatibility of the canisters with heat loading requirements for disposal.

WCS has not included a repackaging capability in its license application.

Alvarez Report pp. 6-7.

Mr. Alvarez further observes that “Repackaging for disposal may require approximately 80,000 ‘small’ canisters. Existing large canisters can place a major burden on a geological repository—such as: handling, emplacement and post-closure of cumbersome packages with higher heat loads, radioactivity and fissile materials. Repackaging expenses rely on the transportability of the canisters, but more importantly on the compatibility of the canister with

¹⁹Alvarez cites Nuclear Waste Technical Review Board, Letter to John Kotek, Acting Assistant Secretary for Nuclear Energy, U.S. Department of Energy, May 23, 2016. <https://www.nwtrb.gov/docs/default-source/correspondence/rce0516.pdf>

²⁰Alvarez cites U.S. Government Accountability Office, Spent Nuclear Fuel Management: Outreach Needed to Help Gain Public Acceptance for Federal Activities That Address Liability, GAO-15.141, October 2014, P. 30. <http://www.gao.gov/assets/670/666454.pdf>

²¹Alvarez cites Chris Phillips, Ivan Thomas and Steven McNiven, Nuclear Industry Study on the Feasibility of Standardized Transportation, Aging and Disposal Canisters for Used Nuclear Fuel, Energy Solutions Federal EPC. WM2014 Conference, March 2-6, 2014, Phoenix, Arizona, USA. <http://www.wmsym.org/archives/2014/papers/14011.pdf>

heat loading requirement for disposal.”²²

In 2012, Energy Department researchers concluded that “waste package sizes for the geologic media under consideration ... are significantly smaller than the canisters being used for on-site dry storage by the nuclear utilities.”²³ A nuclear industry study concluded in 2014 that “casks and canisters being used by the power utilities will be at least partially, and maybe largely, incompatible with future transport and repository requirements, meaning that some, if not all, of the [used nuclear fuel] that is moved to dry storage by the utilities will ultimately need to be repackaged.”²⁴

Mr. Alvarez projects large and growing costs of repackaging at a centralized storage site. Using the Columbia Generating Station as a representative example of a nuclear power plant that one day will need to transport its spent nuclear fuel to a consolidation site, he estimates the expense of moving SNF into canisters to be moved “could involve cutting open 120 dry casks and repacking approximately 8,160 spent fuel assemblies into casks suitable for disposal” at additional costs of from \$272 million to \$915 million²⁵ for only a single reactor in the U.S. fleet. Alvarez points out that the present lack of decision as to the type of geologic repository will determine the size of the repackaged canisters. *Id.*

²²<http://www.beyondnuclear.org/storage/kk-links/Alvarez%20SNF%20at%20closed%20reactors%20rev%202.pdf>

²³*Id.*

²⁴Chris Phillips, Ivan Thomas and Steven McNiven, “Nuclear Industry Study on the Feasibility of Standardized Transportation, Aging and Disposal Canisters for Used Nuclear Fuel,” Energy Solutions Federal EPC. WM2014 Conference, March 2-6, 2014, Phoenix, Arizona, USA. <http://www.wmsym.org/archives/2014/papers/14011.pdf>

²⁵https://www.eesi.org/files/071618_Nuclear_Plant_Decommissioning_Briefing_Slides.pdf

B. ISP Grossly Underestimates Concrete LLRW

Pronouncing that “[o]nly very small quantities of solid LLRW are expected to be generated at the CISF,”²⁶ WCS omitted mention of disposal of radioactively activated and radioactively contaminated concrete. Statistics in the ER belie WCS’s conclusion. Millions more tons of LLRW will be produced by operations of the CISF than is disclosed.

In the ER, WCS explains that “CISF will have a total of eight phases. Each phase will encompass an area 107 m. (350 feet) wide and 244 m. (800 feet) long. Each phase is sized to hold approximately 5,000 MTU for a total facility capacity of 40,000 MTU when all eight phases are complete. Within each phase there will be a series of concrete storage pads and vehicle approach aprons. The concrete pads will be 46 to 91 cm. (18 to 36 in) thick, depending on specific load conditions and design requirements. ER § 2.2.2.2, p. 2-7. A concrete batch plant may be constructed in the future at the site, to “provide operational efficiencies by making the precast concrete pieces onsite, rather than transporting them cross-country.” ER § 2.2.2.6, p. 2-8. WCS allocates \$339.2 million for “large concrete pads estimated to cost \$100,000 per canister @ 3,392 canisters stored.” ER, Table 7.3-4, p. 7-21. The WCS CISF storage pads will be conventional cast-in-place reinforced concrete mat foundation structures. SAR § 4.2.3, p. 4-7.

There is another major use for concrete at WCS that likely will be a source of LLRW. Each shipment of SNF will arrive in a dual purpose canister and need to be placed into a concrete overpack and set on a pad. Each concrete overpack is expected to cost \$220,000 (See ER Table 7.3-6). The total expenditure for placing all the spent fuel canisters relocated from the eight shutdown plants and the 43 generic plants, including contingency costs, is estimated to be \$970.1

²⁶ER § 4.13.3, p. 4-61.

million in 2015 dollars. ER § 7.3.3.2, p. 7-23.

ISP estimates that it will provide interim storage for from 80 to 100 years, which falls into the “long-term” storage period. According to the Continued Storage GEIS, “[d]uring long-term storage, storage canisters will reach the end of their design life and require replacement.” *Id.* § 4.15.2.1, p. 4-62.

The quantity of concrete expected to be used is not spelled out; nearly a billion dollars’ worth surely would amount to thousands, if not millions, of tons. Also, there is no quantification of the amount of contaminated soil and other subgrade material that will be converted into LLRW by being part of the physical structure of the CISF. The concrete and subgrade materials that will be bombarded for from 60 to 100 years with neutron radiation will largely if not entirely become LLRW, due to radioactive activation. High burnup fuel stored at WCS would cause an even higher neutron flow rate into surrounding materials than low burnup fuel, because there would be more neutron emitters contained in it (more fission products, more activation products, and more split atoms of U-238 and U-235).

In its application, as noted above, WCS predicts 8 phases, with a 107 m. X 244 m. rectangular slab, about .5 m. to 1.0 m. thick. Conservatively, 107 m. X 244 m. X .5 m. X 8 = ***104,432 cu. m. of concrete.*** The Continued Storage GEIS, by contrast, admits that “LLRW is generated during the long-term time frame during spent fuel repackaging operations, by unloading and loading operations, compaction of canisters removed from service, by replacement of storage casks, horizontal storage modules, and concrete pads, and by replacement of the DTS. ***Using the maximum values in the range described above, this volume of LLW is expected to be no more than about [480 cu. m. (630 cu. yd.)].***” There is an enormous discrepancy between the

GEIS assumption of 630 cu. yds., and Petitioners' estimate of 104,432 cu. m. (a cubic meter is a larger volume measurement than a cubic yard). While the GEIS recognizes the considerably higher and longer-lasting neutron activation effects of high burnup fuel compared to SNF that has been less fissioned,²⁷ there is no reconciliation of the minuscule projection of the GEIS with the enormous potential volume of concrete that will be irradiated by short-term, long-term or indefinite storage even of fuel that is not HBF.

This exposes another material issue of fact involving the ER, the SAR and the Continued Storage GEIS. The understatement of concrete and rubble LLRW volume violates NEPA.

At 10 C.F.R. § 51.45(c), the ER is required to “include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects.” This certainly encompasses accurate quantification and expensing of low-level radioactive waste reasonably expected to be generated as a consequence of ISP CISF operations.

C. ISP Has Not Conducted an Acceptable Life Cycle Estimate of LLRW Volumes and Expense

While ISP ardently seeks to become a DOE contractor, it has a poor understanding of accounting principles. Executive Order 13123 explicitly applies accounting rules for life-cycle estimates of projects receiving significant federal funds. And 10 C.F.R. § 51.45(c) further requires that “the analysis in the environmental report should also include consideration of the

²⁷Based on Table I-2, high burnup fuel (55 GWd/MTU) after 60 years of decay has a neutron flux similar to 30 GWd/MTU fuel after approximately 15 years of decay.” Continued Storage GEIS Apx. I, p. I-4.

economic, technical, and other benefits and costs of the proposed action and its alternatives.”

Section 51.45(e) mandates that the information submitted “should not be confined to information supporting the proposed action but should also include adverse information.” The Council on Environmental Quality regulation requires such analyses to be attached to the Environmental Impact Statement: that implements NEPA cost-benefit analysis, 40 C.F.R. § 1502.23, requires such analyses to be attached to the Environmental Impact Statement:

If a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be incorporated by reference or appended to the statement as an aid in evaluating the environmental consequences. To assess the adequacy of compliance with section 102(2)(B) of the Act the statement shall, when a cost-benefit analysis is prepared, discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations. In any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision.

40 C.F.R. § 1502.23.

ISP’s tabulation in the ER of the quantities of canister LLRW and concrete LLRW do not adequately answer cost or quantitative questions. The partially-developed evidence in the Environmental Report suggests there is a significant underestimate of the quantities of LLRW to be generated by long-term operations and of the associated price tag. A reasonably foreseeable, non-speculative, substantial reduction in benefits triggers the need, under NEPA, to reevaluate the cost-benefit balance of a proposed action before further irreversible environmental costs are incurred. *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-83-57, 18 NRC 445, 630-31 (1983).

Noting that ISP/WCS does not include a repackaging capability in its license application,

Mr. Alvarez found that “the costs of repackaging at a centralized storage site are large, ranging in additional expense from about \$40,000 to about \$87,000 per assembly from a pressurized reactor (PWR) relative to loading and capital costs. For the spent fuel at potential candidate sites with (PWRs), estimated repackaging costs range from \$450 million to \$978 million.” Alvarez Report p. 8. He observes that “In the final analysis, before interim storage facilities are licensed the full costs of government ownership of spent nuclear fuel prior to the accepting title before a disposal repository is opened, are necessary to determine the nature and extent of the federal liability. The ISP license should not be issued until Congress is made aware of this potentially very large public expense.” *Id.*

Contention 5: ISP Has Not Performed an Environmental Justice Investigation of Transportation Communities; the ISP CISF Will Cause Disparate Impacts From Routine and Non-Routine Transportation-Related Radiation Exposures Upon Minority and Low-Income Populations Along Hundreds Of Miles of Transportation Corridors

A. Basis for the Contention

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP states in its License Application (ML 18206A483) that “Transportation of the spent nuclear fuel shipping casks from the originating commercial nuclear reactor to the CISF will be performed in accordance with 10 CFR 71 and the originating reactor licenses *and is not part of this License Application.*” *Id.* § 1.1, p. 1-3 (Emphasis added). With that, WCS severed – and “segmented” – the transportation part of the CISF proposal from the storage component.

Segmentation is impermissible for legal as well as practical reasons. One consequence of the segmentation is that Environmental Justice (“EJ”) compliance in the form of identification and

analysis of potentially affected populations along the anticipated rail, truck and barge routes will be improperly excluded from disclosure in the NEPA document.

B. Facts Upon Which Petitioners Intend to Rely at Trial

1. Joint Petitioners Include Four Environmental Justice Declarants

Four people have submitted standing declarations which assert their Environmental Justice status as petitioner-plaintiffs. Leona Morgan, of Albuquerque, New Mexico, is Dine' Navaho and petitions individually. Petuuche Gilbert is a Native American of the Acoma Pueblo in New Mexico, and a member of Public Citizen, Inc. Cemelli de Aztlan, a Mexican American and Native American, is also a member of Public Citizen and lives in El Paso, Texas. Finally, Rev. James L. Caldwell of Houston, Texas is an African-American and also a member of Public Citizen.

2. Segmentation of Transportation from the CISF Storage Project Is Impermissible

Agencies must consider connected actions within the same EIS. 40 C.F.R. § 1508.25(a)(1). This prevents segmentation, called an “attempt to circumvent [the] NEPA by breaking up one project into smaller projects and not studying the overall impacts of the single overall project.” *Coalition on W. Valley Nuclear Wastes v. Chu*, 592 F.3d 306, 311 (2d Cir. 2009) (quoting *Stewart Park & Reserve Coal., Inc. v. Slater*, 352 F.3d 545, 559 (2d Cir.2003)) (internal quotation marks omitted). Connected actions include those that (1) “[a]utomatically trigger other actions which may require environmental impact statements”; that (2) “[c]annot or will not proceed unless other actions are taken previously or simultaneously”; or that (3) “[a]re interdependent parts of a larger action and depend on the larger action for their justification.” 40 § 1508.25(a)(1).

Generally, in determining whether actions are connected so as to require consideration in the same EIS, courts employ an “independent utility” test, which asks whether each project would have taken place in the other's absence. *See, e.g., N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1087 (9th Cir. 2011); *Chu*, 592 F.3d at 312; *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 531 F.3d 1220, 1228-29 (10th Cir. 2008). If so, they have independent utility, and are not considered connected actions. *N. Plains Res. Council*, 668 F.3d at 1087-88. Transportation is the *sine qua non* of the ISP CISF; without shipment and delivery of SNF and GTCC waste, there is nothing to store.

Petitioners assert the legal impropriety of segmentation of transportation from waste storage elsewhere herein (*see* Contention 1). In the present Contention, Petitioners assert that the NRC must ensure, and find, that the rail routes ultimately selected for delivery from reactor sites to ISP will not pose the potential for, or cause, disparate environmental impacts on the minority and low-income populations found in those transportation corridors. Severance of transportation aspects from the rest of the application means that despite the planned 20-year, 3,000-shipment campaign of nuclear waste over hundreds of thousands of miles, some of it through heavily-populated areas, there will be no equitable steps taken to share the burdens and risks of accident, sabotage, terrorism, and/or routine radioactive exposure from the shipments.

To the Joint Petitioners, segmentation is a serious legal mistake from an overall NEPA perspective as well as from the standpoint of Environmental Justice. NEPA obligates ISP to investigate and compare planned and alternative routes for the transportation of SNF and GTCC waste in order to mitigate the dangers of routine and nonroutine radiological dangers from the shipments. The NRC’s Environmental Justice responsibilities further obligate that EJ aspects be

addressed for the duration of the project. But no such analysis appears in the Environmental Report, and accordingly there is a contention of omission. Absent an embrace of EJ obligations under NEPA, the selection of transportation delivery routes is likely to disproportionately burden local minority and low-income populations found in the respective transportation corridors, from the reactor sites all the way through to the ISP CISF in Texas.

3. Legal Obligations Require Environmental Justice Analysis

The legal roots of Environmental Justice within NRC regulation and jurisprudence are clearly established. In *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), LBP-97-8, Docket No. 70-3070-ML (ASLBP No. 91-641-02-ML) (Special Nuclear Material License), 45 N.R.C. 367, 1997 WL 458771 (May 1, 1997) ("*Louisiana Energy 45*"), the Atomic Safety and Licensing Board ("ASLB") detailed what a licensing applicant must do to ensure that the site selection process to possess and use nuclear material is free from impermissible discrimination as to minority and low-income populations. The ASLB mandated that the NRC staff must investigate or review whether the applicant intentionally discriminated against minority and/or low-income populations. But the Commission, in *Louisiana Energy Services, L.P. (Claiborne Enrichment Ctr.)*, CLI-98-3, Docket No. 70-3070-ML, 47 N.R.C. 77, 1998 WL 191134 (Apr. 3, 1998) ("*Louisiana Energy 47*"), rejected the ASLB's findings concerning allegations of *intentional* discrimination. Nonetheless, the Commission concurred with the ASLB that there is a need to review the potential disparate impact of the site selection process on the minority and/or low-income population, regardless of intent. *Id.*

Louisiana Energy 45 contains the pre-eminent analytical framework to decide EJ issues arising in nuclear licensing proceedings, including the need to avoid or mitigate discriminatory

effects of the original site selection process:

. . . [T]he ER does not reflect consideration of the fact that the plant is to be placed “in the dead center o[f] a rural black community consisting of over 150 families.” The proposed siting of the CEC in a minority community follows a pattern noted in a 1987 study by the United Church of Christ, “Toxic Wastes and Race In the United States, A National Report on the Racial and Socio–Economic Characteristics of Communities With Hazardous Waste Sites.” The study found that “[r]ace proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities. This represented a consistent national pattern.” It also found that “In communities with one commercial hazardous waste facility, the average minority percentage of the population was twice the average minority percentage of the population in communities without such facilities (24 percent vs. 12 percent).” The ER does not demonstrate any attempts to avoid or mitigate the disparate impact of the proposed plant on this minority community.

In the Matter of Louisiana Energy Services, L.P. (Claiborne Enrichment Ctr.) (“Louisiana 45”), 45 N.R.C. 367, 372–73 (May 1, 1997).

The requirement that Environmental Justice concerns be addressed in the NRC licensing process originated with President Clinton’s Executive Order 12898, 59 Federal Register 7629 § 6-609 (1994),²⁸ promulgated contemporaneously with a “Memorandum for the Heads of All Departments and Agencies,” 30 Weekly Comp. Pres. Doc. 279 (Feb. 14, 1994).²⁹ The Executive Order contains a number of provisions, two of which are pertinent here. In subsection 1–101 under the heading “Agency Responsibilities,” the President directed that

[t]o the greatest extent practicable and permitted by law . . . each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

²⁸ “Federal Actions to Address Environmental Justice in Minority Populations and Low–Income Populations,” <https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>

²⁹ <https://www.epa.gov/environmentaljustice/presidential-memorandum-heads-all-departments-and-agencies-executive-order>

And in section 2.2, the President ordered that

[e]ach Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner *that ensures such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.*

Id. at 861.

In the Memorandum to Department Heads, the President emphasized that “Mitigation measures outlined or analyzed in an environmental assessment, environmental impact statement, or record of decision, whenever feasible, should address significant and adverse environmental effects of proposed Federal actions on minority communities and low-income communities.” 30 Weekly Comp. Pres. Doc. 280.

EO 12898 in effect requires that in the application process for a license to store nuclear waste, the NRC must also consider all elements of the CISF proposal and not just the population characteristics of the region surrounding the storage site itself. The EJ inquiry is not limited to effects on EJ peoples around the west Texas location, but also considers effects on EJ populations in the shipping corridors covering thousands of miles of rail, truck and barge routes used for delivering wastes. EJ investigation addresses the question of whether WCS’s project will have the effect of unfairly targeting low-income and minority population concentrations in those corridors and cause them to bear an unequal burden of risk of accidents and routine as well as non-routine radiation exposures.

“The Executive Order recognizes the importance of research, data collection, and analysis, particularly with respect to multiple and cumulative exposures to environmental hazards for low-income populations, minority populations, and Indian tribes. Thus, data on these

exposure issues should be incorporated into NEPA analyses as appropriate.” Council on Environmental Quality, “Environmental Justice Guidance Under the National Environmental Policy Act” p. 3 (“CEQ Guidance”) (1997).³⁰ The CEQ Guidance further advises that

Where a potential environmental justice issue has been identified by an agency, the agency should state clearly in the EIS or EA whether, in light of all of the facts and circumstances, a disproportionately high and adverse human health or environmental impact on minority populations, low-income populations, or Indian tribe is likely to result from the proposed action and any alternatives. This statement should be supported by sufficient information for the public to understand the rationale for the conclusion. The underlying analysis should be presented as concisely as possible, using language that is understandable to the public and that minimizes use of acronyms or jargon.

Id. at 14. Moreover, “Agencies should encourage the members of the communities that may suffer a disproportionately high and adverse human health or environmental effect from a proposed agency action to help develop and comment on possible alternatives to the proposed agency action as early as possible in the process.” CEQ Guidance at 15.

Finally, where an EIS is prepared, and the agency has identified a disproportionately high and adverse human health or environmental effect on low-income populations, minority populations, or Indian tribes from either the proposed action or alternatives,

the distribution as well as the magnitude of the disproportionate impacts in these communities should be a factor in determining the environmentally preferable alternative. In weighing this factor, the agency should consider the views it has received from the affected communities, and the magnitude of environmental impacts associated with alternatives that have a less disproportionate and adverse effect on low-income populations, minority populations, or Indian tribes.

CEQ Guidance at 15.

Thus, whether the Executive Order is viewed as calling for a more expansive interpretation of NEPA, or as merely clarifying NEPA's longstanding requirement for

³⁰https://www.epa.gov/sites/production/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf

consideration of the impacts of major federal actions on the human environment, it clearly directs all agencies to include in their environmental effects analysis “to the greatest extent practicable,” the human health, economic, and social effects on minority and low-income communities.

Louisiana Energy 45 at 374–76.

By voluntarily agreeing to implement the President's environmental justice directive, the Commission has made it fully applicable to the agency and, until that commitment is revoked, the President's order, as a practical matter, applies to the NRC to the same extent as if it were an executive agency. The NRC is obligated, therefore, to carry out the Executive Order in good faith in implementing its programs, policies, and activities that substantially affect human health or the environment. Further, because NRC licensing actions are activities that substantially affect human health and the environment, the Executive Order is applicable to licensing [applications].

Thus, in carrying out the additional obligation the Commission has placed upon us in the hearing order (i.e., to ensure that the Staff's environmental review is adequate and in compliance with section 102(2)(A), (C), and (E) of NEPA), we necessarily also must ensure agency compliance with the President's environmental justice directive. . . .

Id., 45 NRC 367, 376.

The ASLB in *Louisiana Energy 45* cited several factors in the site selection process that could drive a finding that minority communities were targeted. These factors included the precipitous “narrowing of the site selection process,” 45 NRC at 386; the applicant’s “eyeball assessment” of conditions in the community, particularly the location or concentration of minority populations, rather than any true demographic study, 45 NRC 386-87; an overemphasis on “quality of life” factors, which tended to direct a selection towards low-income minority communities while selecting out upper-income white communities, 45 NRC 388; the applicant’s decision not to place the site near institutions such as schools, hospitals, and nursing homes, which again tended to select in low-income minority communities and select out upper-income white communities, 45 NRC 388; and an overly narrow definition of the affected “community,”

which in turn influenced the defined parameters of “community support.” It proceeded to find that

. . . by limiting its consideration to a facial review of the information in the Applicant's ER, the Staff has failed to comply with the President's directive. As we discuss more fully below, *a thorough and in-depth investigation of the Applicant's siting process by the Staff is essential to ensure compliance with the President's nondiscrimination directive if that directive is to have any real meaning.* . . .

Racial discrimination in the facility site selection process cannot be uncovered with only a cursory review of the description of that process appearing in an applicant's environmental report. If it were so easily detected, racial discrimination would not be such a persistent and enduring problem in American society. . . .

Louisiana Energy 45, 45 NRC at 390–91 (emphasis added). The ASLB scored the applicant down for its failure to address the negative impact of decreasing property values on minority and low-income populations in the local area of the proposed site:

Thus, the Staff apparently has not considered the economic impact on property values of siting the CEC in the midst of these neighboring minority communities, *qua* minority communities. Indeed, the exploration of this matter would likely be another circumstance that merits scrutiny under Executive Order 12898.

Louisiana Energy 45, 45 NRC at 410; *see also id.* at 405-07.

In *Louisiana Energy 47*, the Commission agreed that “[u]nder NEPA, agencies are required to consider not only strictly environmental impacts, but also social and economic impacts ancillary to them,” *Louisiana Energy 47*, 47 NRC at 101, including an “examination of a proposed project’s impacts on minority and disadvantaged communities.” *Id.* at 102. But the Commission drew the line on requiring a secondary inquiry as to whether discriminatory effect resulted from actual racial bias. *Id.* This inquiry, which the NRC described as a “further . . . investigation into racial discrimination,” was not within the parameters of the NRC’s licensing authority. *Id.* The Commission emphasized the significance of whether the NEPA decision had discriminatory effects rather than discriminatory motive. The Commission noted that “An

agency's environmental impact statement ‘must be evaluated for *what* it is, not for *why* the drafter may have made it so.’” *Louisiana Energy 47*, 47 N.R.C. at 102, citing *City of Grapevine v. DOT*, 17 F.3d 1502, 1507 (D.C.Cir.1994) (emphasis added), *cert. denied*, 513 U.S. 1043 (1994).

***C. As a Matter of Law, Severing Considerations of Environmental Justice
In Transportation from the Storage Proposal Prevents Analysis
Of Disproportionate Health And Safety Impacts On Many Low-Income
And Minority Populations, And Is Arbitrary And Capricious***

By improperly segmenting the transportation component from the overall WCS proposal, WCS failed to follow the guidance of “Promising Practices for EJ Methodologies in NEPA Reviews: Report of the Federal Interagency Working Group on Environmental Justice & NEPA Committee,” (March 2016).³¹ The “Promising Practices” report contains useful lessons developed for understanding environmental justice within the NEPA process.

The U.S. Environmental Protection Agency’s scoping comments explicitly advised WCS to use “Promising Practices:”

EPA recommends the EIS include an evaluation of environmental justice populations within the geographic scope of the proposal. EPA recommends the EIS address, as appropriate, the potential for disproportionate adverse impacts to minority and low income populations, and the approaches used to foster public participation by these populations. Assessment of the proposal's anticipated impact on minority and low income populations should reflect coordination with those affected populations.

U.S. EPA letter, “Detailed Scoping Comments on the Environmental Impact Statement for the Consolidated Interim Storage Facility in Andrews County, Texas. Docket No. NRC-2016-0231” p. 7 (March 8, 2017), ML18206A483.

“Promising Practices” is relevant to defining the geographic scope of the WCS proposal.

³¹https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

(“For some programmatic assessments, the scope may be regional or national.”). *Id.* at 12.

Moreover, “One of the important functions of defining the affected environment is to help agencies determine the outer boundaries (*i.e.*, footprint) of each potentially impacted resource topic analyzed in the NEPA document.” *Id.* at 15.

In its proposal, WCS has failed to consider the proposed action’s “1) exposure pathways (routes by which the minority or low-income population may come into contact with chemical, biological, physical, or radiological effects); 2) ecological, aesthetic, historic, cultural, economic, social, or health consequences to the community; and 3) distribution of adverse and beneficial impacts from the proposed action.” *Id.* WCS also fails to account for the “Promising Practices” advice that “When minority populations and low-income populations are likely to be affected by the proposed action, agencies may wish to consider identifying alternative locations or sites as mitigation in selecting reasonable alternatives.” *Id.* at 19. “Agencies may wish to consider which alternative(s) have the least adverse impact to minority populations and low-income populations and alternatives that would minimize or mitigate disproportionately high and adverse impacts as a factor when identifying reasonable alternatives and the preferred alternative.” *Id.* at 20. Major urban areas lying on rail routes where SNF and GTCC wastes will travel to west Texas have several local alternative corridors which might be used to mitigate or minimize public exposures to routine as well as non-routine radiological emissions from the canisters and casks.

Though “Promising Practices” is not legally binding guidance, the inclusion of environmental justice analysis in a NEPA evaluation nevertheless is subject to “arbitrary and capricious” review by the courts under the APA. *Communities Against Runway Expansion, Inc. v. F.A.A.*, 355 F.3d 678, 688 (D.C. Cir. 2004). The truncated nature of Environmental Justice

analysis in the WCS proposal, where it has been segmented entirely out of consideration, looms as both arbitrary and capricious.

***D. The Process of Selecting Transportation Routes to the WCS CISF
Will Have A Disparate Impact On Minority And Low-Income Populations
Located In Transportation Corridors***

WCS's segmentation of transportation aspects from the overall proposal means that WCS as applicant has not considered and disclosed the scores of specific anticipated rail, truck and barge routes that will be used to transport 3,000 cargoes of SNF and GTCC waste cross-country to the CISF. The failure to identify and evaluate all routes through an Environmental Justice lens will also preclude a search for, and consideration of, alternate routes through major urban zones. EJ principles force examination of mitigation measures, such as evacuation preparations and the provision of equipment and training to emergency response personnel to deal with unique aspects of radiological accidents, or giving serious attention to time-of-day and traffic aspects. EJ analysis forces the forging of the most protective protocols for traversing high-population regions.

In the Yucca Mountain licensing proceeding, the State of Nevada pronounced that "Nationally, about 218 million people lived within the 50-mile ROI [region of influence] for transportation sabotage and accidents in 2000, according to an analysis based on 2000 Census data prepared for the State of Nevada."³² That is, 218,000,000 people live within 50 miles of at least one transportation artery that could become the scene of sabotage or accidental radiological contamination and/or spillage from a SNF or GTCC waste crisis. The routing network to WCS is similar to that of Yucca Mountain, except for the ultimate destination. The cargo being

³²www.state.nv.us/nucwaste/news2011/pdf/nv110408nrc.pdf, p. 4.

transported is also nearly identical to the wastes that would be delivered to an ultimate repository. Respecting the dangers of transmitting SNF wastes, the DOE in the Yucca Mountain licensing case applied a 50-mile radius in its analyses of transport corridors.³³ It is equally valid to assume that 218,000,000 or more people reside within 50 miles of the transportation corridors to be used for shipping waste to WCS and corollary to that, that a disproportionate percentage of the population in closest proximity to the tracks in many locales consists of low-income and minority people.

As the nation's rail networks expanded in the 19th century, they not only served as a core development feature around which cities could grow, but with increasing populations and complexity of urban development, they became boundaries or divides among racial and ethnic groups, and among economic classes. The phrase "wrong side of the tracks" derives from this observed phenomenon of urban racial and economic segregation and it has attained scientific recognition in the literature. The segregative effect of railroads associates with increased "metropolitan rates of black poverty and overall black-white income disparities, while decreasing rates of white poverty and inequality within the white population."³⁴ Cities that were "subdivided

³³In the "Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, Volume I" (February 2002), the U.S. Department of Energy pronounced that the "region of influence for public health and safety along existing transportation routes is 800 meters (0.5 mile) from the centerline of the transportation rights-of-way and from the boundary of rail yards for incident-free (non-accident) conditions. The region of influence was extended to 80 kilometers (50 miles) to address potential human health and safety impacts from accident scenarios." §§ 3.2.1, p. 3-119.

³⁴Ananat, Elizabeth Oltsman, "The wrong side(s) of the tracks: The causal effects of racial segregation on urban poverty and inequality," 3 American Economic Journal: Applied Economics No. 2, pp. 34-66 (2011), <https://www.aeaweb.org/articles?id=10.1257/app.3.2.34> (from Abstract: "A striking negative correlation exists between an area's residential racial segregation and its population characteristics, but it is recognized that this relationship may not be causal. I present a novel test of causality from segregation to population characteristics by exploiting the arrangements of railroad tracks

by railroads into a greater number of physically-defined neighborhoods became significantly more segregated after the Great Migration of African-Americans to northern and western cities.”³⁵

The tens of millions of people who live, work, conduct business, run errands and recreate within 50 miles of the rail, highway and water routes en route to west Texas contain significant populations of low-income and minority people. Failure to consider the possibility of disproportionate effects from the massive transportation campaign ISP will undertake over 20 years is violative of NRC (and U.S. Department of Transportation) Environmental Justice guidelines and directives. This *de facto* discrimination is unaddressed in the ER as a result of ISP’s segmentation of transportation impacts from the overall project proposal.

In *Louisiana Energy 47*, the Commission stated that while the federal government “may accord substantial weight to the preferences of the applicant . . . in the siting . . . of the project,” the applicant’s environmental impact statement must nonetheless “[r]igorously explore . . . all reasonable alternatives.” *Louisiana Energy 47*, 47 NRC at 103 (emphasis in original), quoting

in the nineteenth century to isolate plausibly exogenous variation in areas' susceptibility to segregation. I show that this variation satisfies the requirements for a valid instrument. Instrumental variables estimates demonstrate that segregation increases metropolitan rates of black poverty and overall black-white income disparities, while decreasing rates of white poverty and inequality within the white population.”).

³⁵Johnson, Rucker C., “The Effects of Residential Segregation During Childhood on Life Chances: Causal Evidence Using Historical Railroad Track Configurations” (2012), https://gsppi.berkeley.edu/~ruckerj/RJabstract_ChildhoodSegregation_LifeChances_RailroadIV_12-11.pdf (from Abstract: “This paper provides new causal estimates of the effects of racial residential segregation during childhood on subsequent adult attainment outcomes. I account for the potential endogeneity of segregation and neighborhood location choice using instrumental variables based on 19th Century railroad track configurations, historical migration patterns, political factors, and topographical features. Following Ananat (2011), it is shown that cities that were subdivided by railroads into a greater number of physically-defined neighborhoods became significantly more segregated after the Great Migration of African-Americans to northern and western cities.”).

40 C.F.R. § 1502.14(a). WCS, then, must conduct an inquest and provide for the NRC’s review of unique impacts on the low-income and minority populations that will be affected by the transportation component of the project. In *Louisiana Energy Services*, the minority community faced “unique burdens,” such as the lack of private transportation that white residents largely did not face. *Louisiana Energy* 47, 47 NRC at 77. The NRC directed that the ASLB consider all of these factors when it reviewed the impacts of the site and mitigation measures, in order to “arrive[] at the ultimate decision on the cost/benefit balance.” *Id.* The NRC cited the applicant’s failure to consider the diminution of property values caused *in particular* by the location of the site in a low-income, minority community. *Id.*

The ISP application compares three other storage sites in Texas and New Mexico alongside its present installation in Andrews County, Texas. Analysis of all four sites considered EJ within a small radius of the CISF. All four sites are hundreds to thousands of miles away from most of the nuclear reactors which will originate SNF and GTCC waste delivery to the ISP facility, yet ISP declined to conduct the necessary EJ inquiry into transportation effects for any of the candidate sites, including its preferred alternative, the WCS facility site.

E. U.S. Department of Transportation Administrators Must Follow Environmental Justice Principles In Route Decision-Making

Among the federal agencies that ISP has listed as having involvement in the environmental approvals and consultation process for the CISF is the U.S. Department of Transportation. ER § 1.3.1.3, p. 1-9. While WCS lists some pertinent regulations that will likely come into play during the 20-year transportation campaign, the company failed to include several pertinent regulations in that section:

- 49 CFR § 172.820 and 49 CFR Appendix D

- 49 CFR Part 174 Carriage by rail
- 49 CFR Part 176 Carriage by vessel
- 49 CFR Part 173, Subpart I (§§ 173.401 – 173.477)

Of these regulations, 10 C.F.R. § 172.820³⁶ and

³⁶(a) *General.* Each rail carrier transporting in commerce one or more of the following materials is subject to the additional safety and security planning requirements of this section:

. . . (3) A highway route-controlled quantity of a Class 7 (radioactive) material, as defined in § 173.403 of this subchapter; . . .

(b) ****; . . .

(c) *Rail transportation route analysis.* For each calendar year, a rail carrier must analyze the safety and security risks for the transportation route(s), identified in the commodity data collected as required by paragraph (b) of this section. . . .

(1) The safety and security risks present must be analyzed for the route and railroad facilities along the route. . . .

(2) In performing the analysis required by this paragraph, the rail carrier must seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the route(s) utilized. . . . For purposes of this section, a high-consequence target means a property, natural resource, location, area, or other target designated by the Secretary of Homeland Security that is a viable terrorist target of national significance, the attack of which by railroad could result in catastrophic loss of life, significant damage to national security or defense capabilities, or national economic harm.

(d) *Alternative route analysis.*

(1) For each calendar year, a rail carrier must identify practicable alternative routes over which it has authority to operate, if an alternative exists, as an alternative route for each of the transportation routes analyzed in accordance with paragraph © of this section. The carrier must perform a safety and security risk assessment of the alternative routes for comparison to the route analysis prescribed in paragraph © of this section. The alternative route analysis must be in writing and include the criteria in appendix D of this part. When determining practicable alternative routes, the rail carrier must consider the use of interchange agreements with other rail carriers. The written alternative route analysis must also consider:

(I) Safety and security risks presented by use of the alternative route(s);

(ii) Comparison of the safety and security risks of the alternative(s) to the primary rail transportation route, including the risk of a catastrophic release from a shipment traveling along each route;

(iii) Any remediation or mitigation measures implemented on the primary or alternative route(s); and

(iv) Potential economic effects of using the alternative route(s), including but not limited to the economics of the commodity, route, and customer relationship.

(2) In performing the analysis required by this paragraph, the rail carrier should seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity to the alternative routes. If a rail carrier determines that it is not appropriate to seek such relevant information, then it must explain its reasoning for that determination in its analysis.

(e) *Route Selection.* A carrier must use the analysis performed as required by paragraphs © and (d) of this section to select the route to be used in moving the materials covered by paragraph (a) of this section. The carrier must consider any remediation measures implemented on a route. Using this process, the carrier must at least annually review and select the practicable route posing the least overall safety and security risk. . . .

(f) *Completion of route analysis.*

(1) The rail transportation route analysis, alternative route analysis, and route selection process required under paragraphs ©, (d), and (e) of this section must be completed no later than the end of the calendar year following the year to which the analyses apply.

(2) The initial analysis and route selection determinations required under paragraphs ©, (d), and (e) of this section must include a comprehensive review of the entire system. Subsequent analyses and route selection determinations required under paragraphs ©, (d), and (e) of this section must include a comprehensive, system-wide review of all operational changes, infrastructure modifications, traffic adjustments, changes in the nature of high-consequence targets located along, or in proximity to, the route, and any other changes affecting the safety or security of the movements of the materials specified in paragraph (a) of this section that were implemented during the calendar year.

(3) A rail carrier need not perform a rail transportation route analysis, alternative route analysis, or route selection process for any hazardous material other than the materials specified in paragraph (a) of this section.

(g) *Rail carrier point of contact on routing issues.* Each rail carrier must identify a point of contact (including the name, title, phone number and e-mail address) on routing issues involving the movement of materials covered by this section in its security plan and provide this information to:

(1) State and/or regional Fusion Centers that have been established to coordinate with state, local and tribal officials on security issues and which are located within the area encompassed by the rail carrier's rail system; and

(2) State, local, and tribal officials in jurisdictions that may be affected by a rail carrier's routing decisions and who directly contact the railroad to discuss routing decisions.

(h) *Storage, delays in transit, and notification.* With respect to the materials specified in paragraph (a) of this section, each rail carrier must ensure the safety and security plan it develops and implements under this subpart includes all of the following:

(1) A procedure under which the rail carrier must consult with offerors and consignees in order to develop measures for minimizing, to the extent practicable, the duration of any storage of the material incidental to movement (see § 171.8 of this subchapter).

(2) Measures to prevent unauthorized access to the materials during

49 C.F.R. Apx. D³⁷ are germane. Both are reproduced in the margin.

storage or delays in transit.

(3) Measures to mitigate risk to population centers associated with in-transit storage.

(4) Measures to be taken in the event of an escalating threat level for materials stored in transit.

(5) Procedures for notifying the consignee in the event of a significant delay during transportation; such notification must be completed within 48 hours after the carrier has identified the delay and must include a revised delivery schedule. A significant delay is one that compromises the safety or security of the hazardous material or delays the shipment beyond its normal expected or planned shipping time. Notification should be made by a method acceptable to both the rail carrier and consignee.

³⁷Appendix D to Part 172 - Rail Risk Analysis Factors

A. This appendix sets forth the minimum criteria that must be considered by rail carriers when performing the safety and security risk analyses required by § 172.820. The risk analysis to be performed may be quantitative, qualitative, or a combination of both. In addition to clearly identifying the hazardous material(s) and route(s) being analyzed, the analysis must provide a thorough description of the threats, identified vulnerabilities, and mitigation measures implemented to address identified vulnerabilities.

B. In evaluating the safety and security of hazardous materials transport, selection of the route for transportation is critical. For the purpose of rail transportation route analysis, as specified in § 172.820(c) and (d), a route may include the point where the carrier takes possession of the material and all track and railroad facilities up to the point where the material is relinquished to another entity. Railroad facilities are railroad property including, but not limited to, classification and switching yards, storage facilities, and non-private sidings; however, they do not include an offeror's facility, private track, private siding, or consignee's facility. Each rail carrier must use best efforts to communicate with its shippers, consignees, and interlining partners to ensure the safety and security of shipments during all stages of transportation.

C. Because of the varying operating environments and interconnected nature of the rail system, each carrier must select and document the analysis method/model used and identify the routes to be analyzed.

D. The safety and security risk analysis must consider current data and information as well as changes that may reasonably be anticipated to occur during the analysis year. Factors to be considered in the performance of this safety and security risk analysis include:

1. Volume of hazardous material transported;
2. Rail traffic density;
3. Trip length for route;
4. Presence and characteristics of railroad facilities;
5. Track type, class, and maintenance schedule;
6. Track grade and curvature;
7. Presence or absence of signals and train control systems along the route (“dark” versus signaled territory);
8. Presence or absence of wayside hazard detectors;
9. Number and types of grade crossings;
10. Single versus double track territory;

Section 172.820 requires shippers of SNF and GTCC wastes to prepare railroad transportation plans for transport, and mandates consideration of alternative routes based on various factors including population density and environmental concerns. Executive Order 12898 has further engrafted Environmental Justice concerns onto the regulation concerning factors for evaluating alternative routes.

The U.S. Department of Transportation, Pipeline Hazardous Materials Safety Administration (“PHMSA”) is the primary transportation regulator with oversight of SNF/GTCC waste shipping. PHMSA must follow the USDOT’s established Environmental Justice Strategy formulated pursuant to EO 12898.³⁸ An upshot of the Strategy is U.S. DOT Departmental Order 5610.2(a), “Actions to Address Environmental Justice in Minority Populations and Low-Income

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11. Frequency and location of track turnouts;
 12. Proximity to iconic targets;
 13. Environmentally sensitive or significant areas;
 14. Population density along the route;
 15. Venues along the route (stations, events, places of congregation);
 16. Emergency response capability along the route;
 17. Areas of high consequence along the route, including high consequence targets as defined in § 172.820(c);
 18. Presence of passenger traffic along route (shared track);
 19. Speed of train operations;
 20. Proximity to en-route storage or repair facilities;
 21. Known threats, including any non-public threat scenarios provided by the Department of Homeland Security or the Department of Transportation for carrier use in the development of the route assessment;
 22. Measures in place to address apparent safety and security risks;
 23. Availability of practicable alternative routes;
 24. Past incidents;
 25. Overall times in transit;
 26. Training and skill level of crews; and
 27. Impact on rail network traffic and congestion.

³⁸<https://www.transportation.gov/policy/transportation-policy/environmental-justice-strategy>

Populations,”³⁹ which “sets forth the USDOT policy to consider environmental justice principles in *all* (U.S. DOT) programs, policies, and activities.” *Id.* EJ objectives are required to be integrated into planning and programming, rulemaking, and policy formulation using measures to prevent disproportionately high and adverse effects to minority or low-income populations. Section 7(b) of DO 5610.2(a) requires that agency decision making “assure that nondiscrimination and the prevention of disproportionately high and adverse effects are. . . administered so as to identify, early in the development of the program, policy or activity, the risk of discrimination and disproportionately high and adverse effects so that positive corrective action can be taken. . . to guard against disproportionately high and adverse effects on persons on the basis of race, color, or national origin, and income level. . . . “ The administration of statutes governing DOT operations must “identify and avoid discrimination and avoid disproportionately high and adverse effects on minority populations and low-income populations by. . . *proposing measures to avoid, minimize and/or mitigate disproportionately high and adverse environmental and public health effects. . . [and] considering alternatives to proposed programs, policies, and activities, where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts*, consistent with the Executive Order. . . .” DO 5610.2(a)(7)(c) (Emphasis added).

Where actions encompass disproportionately negative effects, DO 5610.2(a)(8) requires that:

- a. Following the guidance set forth in this Order and its Appendix, the head of each Operating Administration and the responsible officials for other DOT components shall *determine whether programs, policies, or activities for which they are responsible*

³⁹https://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/

will have an adverse human health or environmental effect on minority and low-income populations and whether that adverse effect will be disproportionately high.

b. In making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancements measures that will be implemented and all offsetting benefits to the affected minority and low-income populations may be taken into account, as well as the design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas.

c. The Operating Administrators and other responsible DOT officials will ensure that any of their respective programs, policies or activities that will have a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable. In determining whether a mitigation measure or an alternative is "practicable," the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.

d. The Operating Administrations and other responsible DOT officials will also ensure that any of their respective programs, policies, or activities that will have a disproportionately high and adverse effect on populations protected by Title VI ("protected populations") will only be carried if:

(1) a substantial need for the program, policy, or activity exists, based on the overall public interest; and

(2) alternatives that would have less adverse effects on protected populations (and that still satisfy the need identified in subparagraph d(1) above), either

(a) would have other adverse social, economic, environmental or human health impacts that are severe; or

(b) would involve increased costs of extraordinary magnitude.

*e. ****;*

f. The findings, determinations, and/or demonstration made in accordance with this section must be appropriately documented, normally in the environmental impact statement or other NEPA document prepared for the program, policy, or activity, or in other appropriate planning or program documentation.

Id. (Emphasis added).

ISP's Environmental Report segments the project and so neither recognizes the need to integrate EJ principles into transportation route planning, nor provides any mechanism by which EJ considerations will address the shipment of 3,000 anticipated shipments of SNF and GTCC waste through scores of major population centers. WCS shows no understanding that PHMSA

will be required by internal agency orders to require radioactive waste transport permits to account for Environmental Justice concerns. Yet rail routes posing disproportionately high and adverse effects on minority or low-income populations “will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable.”

By 10 C.F.R. § 51.45(d), the Environmental Report:

shall list all Federal permits, licenses, approvals and other entitlements which must be obtained in connection with the proposed action and shall describe the status of compliance with these requirements. The environmental report shall also include a discussion of the status of compliance with applicable environmental quality standards and requirements including, but not limited to, applicable zoning and land-use regulations, and thermal and other water pollution limitations or requirements which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection. The discussion of alternatives in the report shall include a discussion of whether the alternatives will comply with such applicable environmental quality standards and requirements.

Respecting Environmental Justice, WCS has not complied at all insofar as applying EJ principles and requirements to analysis of the transportation of SNF and GTCC waste to Texas.

The Joint Petitioners have articulated issues of material fact and law in conflict with the ISP application and Environmental Report which necessitate admission of this contention for adjudication.

Contention 6: Inadequate Disclosure of Oil and Gas Drilling Activity Beneath the WCS CISF Site

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

Horizontal hydraulic fracturing (“fracking”) activity is taking place in close proximity to the ISP/WCS site. It is technologically and legally possible that fracking will be undertaken

directly beneath the waste storage areas of the site. Fracking has seismic, groundwater flow and water consumption implications, which become cumulative if extraction wells and/or waste injection disposal wells are developed near and/or underneath WCS. There is no indication in the Environmental Report or Safety Analysis Report of legal controls over present or potential oil and gas drilling directly beneath the site. The presence, overall, of mineral interests beneath or proximate to the waste storage portion of the ISP site is inadequately disclosed. Consequently, the realistic prospects for mineral development immediately surrounding and underneath the WCS site, and the implications for inducing or expediting geological problems including seismicity and groundwater movement, are unknown.

Basis for the Contention

Horizontal hydraulic gas and oil fracturing, or “fracking,” employs lateral drilling through productive underground shale seams for up to several miles in the Permian Basin region of west Texas and southeastern New Mexico. A fracked well can be drilled vertically offsite miles away or only a few yards from WCS’s land, with drilling taking place thousands of feet directly underneath the WCS site.^{40 41 42} At the fracturing stage which gives fracking its name, subterranean high explosives are detonated, deliberately set to create underground caverns into

⁴⁰“The wells typically cost \$2 million to drill with an average depth of 11,800 feet.” “Horizontal Drilling Accelerates in Permian Basin,” <https://www.aogr.com/magazine/editors-choice/horizontal-drilling-accelerates-in-permian-basin>

⁴¹Graph showing average well depths in west Texas counties adjoining southeastern New Mexico at 8,000 to nearly 12,000 feet, “Permian Oil and Gas Takeaway Capacity Improvements on Horizon,” <https://info.drillinginfo.com/category/permian-basin/>

⁴²Scoping comment letter in Holtec proceeding, Fasken Oil and Ranch, Ltd., July 30, 2018 (submitted with Petition). Fasken, a land owner and gas and oil driller with interests “adjacent” to the Holtec site, stated: “Currently, drilling techniques used to extract minerals in the Permian Basin involve drilling horizontally into deep underground formations up to two miles beneath the earth’s surface.”

which industrial chemistry cocktails and liquified sand are injected to draw out oil and gas. The physical aspects of fracking as heavy industrial activity are a matter of concern to the operation of the CISF, which depends on very long-term geological and hydrological stability in order to minimize the chances of, or avoid entirely, potentially dangerous releases, leaks, emissions and/or spills of hazardous radioactive wastes.

There is considerable oil and gas activity proximate to the WCS site. “The Elliott Littman oil field is to the northwest, the Freund and Nelson oil fields are to the south, the Paddock South and Drinkard oil fields are to the southwest, and the Fullerton oil field is to the east.” ER § 3.1, p. 3-2. “Land uses within a few miles of the CISF include . . . drilling for and production from oil and gas wells . . . and the surface recovery and land farming of oil field wastes.” *Id.*

To the human-altered geology surrounding the WCS site, add the documented phenomenon of Permian Basin subsidence in a 4,000-square-mile region of west Texas where WCS is located, proven by Southern Methodist University scientists.⁴³

Neither the WCS ER nor SAR report any facts about land ownership and legal control of the mineral rights interests of the site where the waste storage will occur, other than short references to the project taking place on WCS’s land. The omission of information about legal title to subsurface mineral rights at WCS means there is no certainty that fracking and possibly waste well injection disposal activities will be prohibited underneath the WCS site. Fracking and waste well activity can cumulatively contribute to the potential for induced seismicity.

The ER and SAR also fail to connect the considerable history of oil and gas development

⁴³“Association between localized geohazards in West Texas and human activities, recognized by Sentinel-1A/B satellite radar imagery.” <http://www.nature.com/articles/s41598-018-23143-6>

in the immediate area, including, as noted above, land-farming of oil and gas wastes. There is no investigation in the ER into the chemical status of water from the Ogallala Aquifer and smaller aquifers to which it is connected in the vicinity, and of soils and their possibly corrosive effects on steel casks, as well as their corrosive effect on the concrete bunkers, pads and artificial substrate materials.

10 C.F.R. § 72.120(d) requires that:

The ISFSI or MRS must be designed, made of materials, and constructed to ensure that there will be no significant chemical, galvanic, or other reactions between or among the storage system components, spent fuel, reactor-related GTCC waste, and/or high level waste including possible reaction with water during wet loading and unloading operations or during storage in a water-pool type ISFSI or MRS. The behavior of materials under irradiation and thermal conditions must be taken into account.

ISP/WCS has ignored and failed to integrate evidence of groundwater at the site with such facts as the potential for induced geological faults from fracking; associated seismic activity; the potential for drilling waste disposal injection wells that may enable groundwater movement and circulation underneath the site which could alter the geological support for tens of thousands of tons of additional weight; the reality that corrosives such as hydrochloric acid are commonly used in early stages of fracked oil and gas well development,⁴⁴ and the reality that fracking will continue indefinitely alongside and possibly underneath, the land where the cask pads will be constructed.

By not evaluating the effects of prospective storage of extremely dangerous radioactive waste materials for decades alongside contemporaneous, and likely increasing, petroleum extraction drilling in the immediate vicinity, ISP's ER discussion does not provide adequate

⁴⁴“Hydrochloric acid (HCl) is the single largest liquid component used in a fracturing fluid aside from water.” <https://geology.com/energy/hydraulic-fracturing-fluids/>

assurance of compliance with NRC environmental regulations. Located in an area of seismicity east of the Rocky Mountains, the site must be evaluated by the techniques contained in 10 C.F.R. § 72.103(f), which mandates that geological, seismological, and engineering characteristics

must be investigated in sufficient scope and detail to permit an adequate evaluation of the proposed site, to provide sufficient information to support evaluations performed to arrive at estimates of the DE, and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site. . . . Data on the vibratory ground motion, tectonic surface deformation, nontectonic deformation, earthquake recurrence rates, fault geometry and slip rates, site foundation material, and seismically induced floods and water waves must be obtained by reviewing pertinent literature and carrying out field investigations. However, each applicant shall investigate all geologic and seismic factors (for example, volcanic activity) that may affect the design and operation of the proposed ISFSI or MRS facility irrespective of whether these factors are explicitly included in this section.

In addition, 10 C.F.R. § 72.103(e) cautions that sites “which require a minimum of engineered provisions to correct site deficiencies are preferred,” and “Sites with unstable geologic characteristics should be avoided.” Additionally, § 72.103(f)(2)(iv) directs that “Each applicant shall evaluate all siting factors and potential causes of failure, such as, the physical properties of the materials underlying the site, ground disruption, and the effects of vibratory ground motion that may affect the design and operation of the proposed ISFSI or MRS.” This seems not to have been undertaken in cognizance of the proximate nature of mineral extraction activities to the site.

Petitioners assert that the ER also appears in noncompliance with other regulations. By 10 C.F.R. § 72.90:

(a) Site characteristics that may directly affect the safety or environmental impact of the ISFSI or MRS must be investigated and assessed.

(b) Proposed sites for the ISFSI or MRS must be examined with respect to the frequency and the severity of external natural and man-induced events that could affect the safe operation of the ISFSI or MRS.

No such investigations are described in the ER.

Also, these inquiries imposed by 10 C.F.R. § 72.94 also are missing from the ER:

(a) The region must be examined for both past and present man-made facilities and activities that might endanger the proposed ISFSI or MRS. The important potential man-induced events that affect the ISFSI or MRS design must be identified.

(b) Information concerning the potential occurrence and severity of such events must be collected and evaluated for reliability, accuracy, and completeness.

Petitioners have postulated many conflicts with and contradictions of the CISF plan, not the least of which is the ongoing controversy about the presence or absence of the Ogallala Aquifer beneath or proximate to the proposed storage site. These issues of fact warrant a hearing on this contention.

Contention 7: Disqualifying Foreign Ownership of Interim Storage Partners

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

Interim Storage Partners is majority controlled by a foreign corporation and is barred by statute and regulation from seeking or receiving a license from the Nuclear Regulatory Commission.

Basis for the Contention

Section 103(d) of the Atomic Energy Act (42 U.S.C. § 2133) states pertinently as follows:

. . . No license may be issued to an alien or any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. In any event, no license may be issued to any person within the United States if, in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public.

Section 104(d) of the AEA (42 U.S.C. § 2134) contains a nearly identical prohibition.

NRC regulations, specifically 10 C.F.R. § 50.38, state that “Any person who is a citizen,

national, or agent of a foreign country, or any corporation, or other entity which the Commission knows or has reason to believe is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, shall be ineligible to apply for and obtain a license.”

Facts Upon Which Petitioners Intend to Rely In Support of The Contention

At p. 1-4 of the “Interim Storage Partners LLC License Application” (ML 18206A483)

Interim Storage Partners (“ISP”) states:

1.4 DESCRIPTION OF THE LICENSE APPLICANT

Interim Storage Partners LLC (ISP) is a limited liability company formed in Delaware with principal offices at Andrews, Texas. ISP is jointly owned by Orano CIS (51%) and Waste Control Specialists LLC (49%). The sole purpose of ISP is to license, design, construct and operate the CISF at the Waste Control Specialists site in Andrews, Texas, referred to as the WCS CISF.

1.5 LEGAL STATUS AND ORGANIZATION

ISP is a limited liability company organized and existing under the laws of the State of Delaware. Its principal office is located in Andrews, Texas. The proposed site for the CISF is at the Waste Control Specialists waste disposal and storage facilities located at 9998 Texas Highway 176 West, approximately 32 miles west of Andrews, Texas. The organizational structure for the WCS CISF is further described in Section 13.1 of the Safety Analysis Report. *ISP is majority owned and controlled by Orano CIS, which is owned 100% by Orano USA LLC. Orano CIS and Orano USA are both limited liability companies formed in the State of Delaware. Orano USA is ultimately majority owned and controlled by FAE AEC, an entity of the French government.* Orano participates in a wide range of nuclear fuel cycle activities in the United States regulated by the NRC. All ISP officers, managers and management board members will be U.S. citizens. Given the nature of the CISF and the role of Orano across the U.S. nuclear fuel cycle, the participation of Orano in this project raises no inimicality concerns. The names of ISP governance and principal officers, all of whom are citizens of the United States, are provided at the end of this chapter.

The oversight and governance of ISP is provided by a Management Board that consists of the head of Orano CIS and one of the key members of its management team and the head of Waste Control Specialists and a key member of its management team.

(Emphasis added). *See also* the corporate interrelationships of ISP described at SAR § 13.1, pp. 13-2 - 13-3. The chain of foreign ownership of 51% of Interim Storage Partners goes all the way back to FAE AEC, an entity of the French government. Petitioners state that the participation of

Orano as majority shareholder of ISP poses inimicality concerns. ISP/WCS have not provided evidence that ISP is not “foreign owned, controlled or dominated” (FOCD) by Orano.

There is no dispute that 42 U.S.C. §§ 2133 and 2134 are applicable to this proceeding.

The NRC’s Standard Review Plan on Foreign Ownership, Control, or Domination (“FOCD SRP”) states that an entity is considered to be under foreign ownership, control, or domination “whenever a foreign interest has the ‘power,’ direct or indirect, whether or not exercised, to direct or decide matters affecting the management or operations of the applicant.” “Final Standard Review Plan on Foreign Ownership, Control, or Domination,” 64 Fed. Reg. 52,355, 52,358 (Sept. 28, 1999). The SRP cautions that there is generally no specific ownership percentage above which the NRC Staff would conclusively determine that an applicant is per se controlled by foreign interests. *Id.* Rather, the SRP provides that foreign control “must be interpreted in light of all the information that bears on who in the corporate structure exercises control over what issues and what rights may be associated with certain types of shares.” *Id.*

The SRP also directs that where the ownership interest is less than 100 percent, the NRC Staff’s primary focus should remain on safeguarding security and the national defense (*id.*), although the NRC Staff is to consider as well a variety of factors that include: (1) the extent of the proposed partial ownership of the reactor;⁴⁵ (2) whether the applicant is seeking authority to operate the reactor; (3) whether the applicant has interlocking directors or officers and details concerning the relevant companies; (4) whether the applicant would have any access to restricted data; and (5) details concerning ownership of the foreign parent company. *Id.*

⁴⁵Joint Petitioners argue analogously. It is ownership of a CISF, not a reactor, under scrutiny in this contention.

The Commission has stated that the term “owned, controlled, or dominated” in the AEA means relationships in which the will of one party is subjugated to the will of another. *In the Matter of Gen. Elec. Co. & Sw. Atomic Energy Assocs.*, 3 AEC 99, 101 (1966). The Commission has likewise held that the intent of Congress “was to prohibit such relationships where an alien has the power to direct the actions of the licensee.” *Id.* Furthermore, according to the Commission, the statutory limitation on foreign ownership, control, or domination “should be given an orientation toward safeguarding the national defense and security.” *Id.* See also FOCD SRP, 64 Fed. Reg. at 52,357 (“The foreign control determination is to be made with an orientation toward the common defense and security.”). The FOCD SRP further states that “[t]he Commission has stated that in context with the other provisions of Section 104d, the foreign control limitation should be given an orientation toward safeguarding the national defense and security.” *Id.* at 52,358 (referring to *Gen. Elec. Co.*, 3 AEC 99).

Under the FOCD SRP, even if an applicant is considered to be foreign owned, controlled, or dominated, it is permitted to negate potential foreign ownership, control, or domination by establishing a Negation Action Plan (“NAP”). *Id.* at 52,359. When factors not related to ownership are present, the SRP directs that NAPs provide positive measures to ensure that the foreign interest is effectively denied control or domination. *Id.* at 52,358.

The SRP includes the following examples of measures that may be sufficient to negate foreign control or domination:

- Modification or termination of loan agreements, contracts, and other understandings with foreign interests.
- Diversification or reduction of foreign source income.

- Demonstration of financial viability independent of foreign interests.
- Elimination or resolution of problem debt.
- Assignment of specific oversight duties and responsibilities to board

members.

- Adoption of special board resolutions.

FOCD SRP at 52,539.

In the present matter, based on the limited facts given by ISP/WCS, ISP is majority owned and controlled by Orano CIS, which is in turned owned 100% by Orano USA LLC. Orano USA is majority owned and controlled by FAE AEC, an entity of the French government. ISP/WCS have not presented a Negation Action Plan to negate the presumption of foreign ownership and control. ISP/WCS's provision of a list of names of ISP governance and principal officers, all of whom are citizens of the United States, is of some help in understanding how the day-to-day operations of WCS will be achieved. ISP's description in ER § 1.5 of the Management Board, consisting of the head of Orano CIS and one a key member of its management team, along with the head of Waste Control Specialists and a key member of its management team does not account for the relative voting or decision-making power held by the two entities, and does not suggest any other conclusion than that Orano has a 51% ultimate say in the affairs of ISP/WCS. The lack of provision of the sorts of evidence of how American operations will proceed on a routine basis, as suggested by the FOCD SRP at p. 52,539 only underscores that the evidence provided in the license application is insufficient to negate the apparent circumstance of overwhelming control exercised by Orano over ISP/WCS.

Accordingly, the application must be rejected because of the inability of ISP/WCS to

comply with 42 U.S.C. §§ 2133 and 2134.

Contention 8: The Discussion of Alternatives to the Proposed Project Is Inadequate Under NEPA

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

The no-action alternative in the WCS ER is incomplete because it does not acknowledge safer storage methods at reactor sites, such as hardened on-site storage (“HOSS”), nor does it acknowledge the NRC’s Continued Storage Rule that concludes that waste can be safely stored at reactor sites indefinitely.

There are at least four alternatives to the proposed CISF project which are neither recognized nor addressed in the Environmental Report, contrary to NEPA requirements.

Basis for the Contention

In the Continued Storage GEIS, NUREG-2157, Executive Summary, at Table ES-3, “Summary of Environmental Impacts of Continued At-Reactor Storage,” pp. xlvii-xlviii, environmental impacts in 23 categories are all deemed “small” except for management of nonradioactive waste, which is deemed “small to moderate.” Continuation of current storage at reactor sites is directly comparable, and even has advantages, over the expense and unnecessary transportation impacts of a CISF.

The ER, and eventually the EIS prepared by NRC, must examine all reasonable alternatives, including the no-action alternative. This comparison must encompass a thorough discussion of the no-action alternative, as well as any “reasonable” “action” alternatives.

There are at least five “action” alternatives not presented by ISP:

- establishment of a Dry Transfer System or equivalent capability to repackage SNF at

the ISP site;

- modification of the site’s Emergency Response Plan to include preparations for emissions mitigation (*i.e.*, reduction of emissions to the surrounding environment of radiation and/or radioactive material from SNF as a result of damage to SNF assemblies and/or SNF containers);

- modification of the ISFSI design so that SNF stored at the ISP facility would be more robust against accident, attack, and/or removal of SNF assemblies or their components for malevolent purposes;

- ownership, design, and control of the facility by the US federal government (together with a competent disclosure that there is no legal authority for such); and

- accelerated movement to implement Hardened Onsite Storage (“HOSS”) principles at reactor sites. *See* “HOSS Statement of Principles for Safeguarding Nuclear Waste at Reactors,” https://ieer.org/wp/wp-content/uploads/2010/03/HOSS_PRINCIPLES_3-23-10x.pdf (March 23, 2010); Dr. Gordon Thompson's January 2003 “Robust Storage” report, <http://archives.nirs.us/reactorwatch/security/sechosses012003.pdf> (Executive Summary); <http://archives.nirs.us/reactorwatch/security/sechossrpt012003.pdf> (Full Report).

Facts Upon Which Joint Petitioners Intend to Rely In Support of the Contention

ISP discusses the no-action alternative in a total of four paragraphs. *See* ER § 2.1, noting that a “decision by the NRC not to approve the WCS CISF license would constitute inaction in response to the Commission’s rulemaking on the Continued Storage of SNF and the recommendations from the President’s Blue Ribbon Commission on America’s Nuclear Future to promote efforts to develop one or more consolidated storage facilities in the U.S.” *Id.* at p. 2-2.

But there is no comparative analysis of the positive safety considerations of keeping the waste at the reactor sites, nor of the use of Hardened On-Site Storage (“HOSS”). There is no disclosure of the core findings in the Continued Storage Rule that found no advantage to CISF storage methodology.

The failure to consider five alternatives to the ISP project as proposed comprise five contentions of omission. Where a contention alleges the omission of material information or an issue from an application, the contention remains a live controversy until and unless the information is later supplied by the applicant, which renders the contention moot. *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), LBP-06-16, 63 NRC 737, 742 (2006).

NEPA does not permit an agency to:

. . . [C]ontrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence). . . . If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role. Nor can the agency satisfy [NEPA].

Simmons v. United States Army Corps of Eng'rs, 120 F.3d 664, 665 (7th Cir. 1997). See also *Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986) (“evaluation of ‘alternatives’ mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals”); also, *Sierra Club v. Marsh*, 714 F.Supp. 539, 577 (D.Me. 1989) (“project’s principal goals must override the stated preferences of the applicant for purposes of NEPA’s ‘reasonable alternatives’ analysis”); *DuBois v. U.S. Dept. of Agric.*, 102 F.3d 1273, 1287 (1st Cir. 1996), *cert. denied*, 117 S.Ct. 1567 (1997) (existence of a reasonable, but unexamined, alternative renders the EIS inadequate). Courts must ensure that the ultimate site decision is made only after reasonable

alternatives and their impacts are properly identified in the NEPA document. *Concerned About Trident v. Rumsfeld*, 555 F.2d 817 (D.C. Cir. 1977).

Under NEPA, the environmental review must “rigorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14(a). The regulations require a discussion of a no-action alternative. 40 C.F.R. § 1502.14(d). NEPA expects a “substantial treatment of each alternative” to be considered in an EIS. 40 C.F.R. § 1502.14(b); see also, *Southeast Alaska Conservation Council v. FHWA*, 649 F.3d 1050 (9th Cir. 2011).

The purpose of the no-action alternative is to “compare the potential impacts of the proposed major federal action to the known impacts of maintaining the *status quo*.” *Custer Cnty. Action Ass'n v. Garvey*, 256 F.3d 1024, 1040 (10th Cir. 2001). In other words, the no-action alternative cannot just be blithely dismissed with unsupported statements. The agency may not accept out of hand the applicant’s statement of purpose and need, *ELPC v. NRC*, 470 F.3d 676, 683 (7th Cir. 2006), and then use that statement of purpose and need to summarily reject the no-action alternative.

The discourse on alternatives to the project proposal comprises the "heart" of an EIS. 40 C.F.R. § 1502.14. “The existence of a viable but unexamined alternative renders an environmental impact statement inadequate. An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action, and sufficient to permit a reasoned choice.” *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995). For those “alternatives which were eliminated from detailed study” in the EIS, the NRC must “briefly discuss the reasons for their having been eliminated.” *Utahns for Better Transp.*, 305 F.3d at 1166 (quoting 40 C.F.R. § 1502.14(a)). The Administrative Procedure Act’s

reasonableness standard applies both to the determination of which alternatives the agency discusses and the extent to which it discusses them. *City of Grapevine v. Department of Transp.*, 17 F.3d 1502, 1506 (D.C. Cir. 1994).

The ER § 2.1 discussion of the no-action alternative is noteworthy for what it doesn't say. ISP states that "Under the no-action alternative, commercial reactors that have already undergone decommissioning would be required to operate their ISFSIs in accordance with regulatory and license requirements and maintain a physical security program to ensure that the SNF remains adequately protected against potential malevolent acts," but security is a role that would merely be transferred to ISP were the CISF licensed. ISP provides no demonstration of the overall benefits and costs of leaving the waste at the reactor site compared to the benefits and costs of sending waste from many reactors to ISP. ISP has avoided a comparison of its preferred action alternative with the no-action alternative, and with variants of its project proposal. This is of particular importance because ISP's preferred alternative will leave considerable quantities of SNF and GTCC waste at reactor sites, which would cause the licensees of those sites to have to maintain their licenses and expend considerable resources to provide security and site stability, even if the CISF is licensed and built. ISP's dismissive handling of the no-action alternative excuses the company from having to demonstrate a losing cost-benefit comparison.

Although NEPA does not require a cost-benefit analysis, an agency choosing to "trumpet" an action's benefits has a duty to disclose its costs. *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983). "[I]t is essential that the EIS not be based on misleading economic assumptions." *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446, 448 (4th Cir.1996) (inflated estimate of recreation benefits versus adverse environmental effects).

Misleading information about economic impacts can defeat the “hard look” function of an EIS. *South Louisiana Environmental Council v. Sand*, 629 F.2d 1005 (5th Cir.1980).

Based on the foregoing, the discussion of the no-action alternative in the ER is deficient and must be rejected as an inadequate comparison to the preferred alternative.

Contention 9: ISP Misrepresents the Financial Benefits to the Federal Government From Opening and Operating A CISF

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP maintains that establishment of the proposed ISP facility would financially benefit the US federal government. There is considerable dispute over whether the proposed action of opening a CISF at Interim Storage Partners’ site in west Texas will provide over \$5 billion of net economic benefit to the U.S. Government.

Basis for the Contention

The ISP Environmental Report says:

Because the federal government does not have a storage or disposal facility for spent nuclear fuel, the DOE has been successfully sued by plant operators to reimburse them for their storage costs. The estimated benefit of the proposed action was measured as the cost of continuing to reimburse operators of shutdown plants for storing spent nuclear fuel over the next 40 years under a “no action” scenario and subtracting the reduced reimbursement schedule, if the CISF [consolidated interim storage facility] is built. Based upon the very conservative assumptions in this benefit-cost analysis, the proposed action would create a benefit to the federal government of \$5,401,062,500 (not discounted), as shown in Table 7.4-1.

ER § 7.4.1, p. 7-29.

Facts Upon Which Joint Petitioners Intend to Rely In Support of the Contention

But the ISP Environmental Report provides no “benefit-cost analysis.” There is a “Table

7.4-1,” but it only depicts purported benefits from development of the ISP CISF and does not explain what the Federal Government would have to pay, anyway, for continued storage of SNF at reactor sites under existing legislation and DOE contracts with utilities, plus contemporaneous large payments for the opening and operation of the WCS/ISP CISF, including all related activities, such as transportation.

NRC regulations at 10 C.F.R. § 51.45© require that “the analysis in the environmental report should. . . include consideration of the economic, technical, and other benefits and costs of the proposed action and its alternatives.” Section 51.45(e) mandates that the information submitted “should not be confined to information supporting the proposed action but should also include adverse information.” Council on Environmental Quality NEPA regulations at 40 C.F.R. § 1502.23 require cost-benefit analyses to be attached to be disclosed in the environmental document:

If a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be incorporated by reference or appended to the statement as an aid in evaluating the environmental consequences. To assess the adequacy of compliance with section 102(2)(B) of the Act the statement shall, when a cost-benefit analysis is prepared, discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations. In any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision.

40 C.F.R. § 1502.23.

ISP’s Table 7.4-1 does not quantify readily-quantifiable environmental impacts and values, namely, there is no explanation of the cost burden that would be shouldered by the DOE irrespective of the geographical location of SNF storage facilities (*i.e.*, at-reactor or away-from-

reactor). It is misleading and not a *bona fide* cost-benefit analysis.

NEPA does not require a cost-benefit analysis; but an agency choosing to “trumpet” an action's benefits has a duty to disclose its costs. *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983). “[I]t is essential that the EIS not be based on misleading economic assumptions.” *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446, 448 (4th Cir.1996) (inflated estimate of recreation benefits versus adverse environmental effects). Moreover, misleading information about economic impacts can defeat the “hard look” function an EIS must fulfill. *South Louisiana Environmental Council v. Sand*, 629 F.2d 1005 (5th Cir.1980).

Contention 10: The Predicted Lengths of the Period of Operation of the CISF Warrants Scrutiny Under NEPA of Storage Exceeding 100 Years

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

WCS plans to provide long-term SNF storage for up to either 40, 60 or 100 years, depending on which statement one wishes to rely on or until a geological repository is developed. The indefinite length of the interim storage scheme requires NEPA evaluation beyond 60 years of operations.

Basis for the Contention

WCS uses indefinite references in discussing the probable operational life of the CISF:

- “The CISF is designed to store spent nuclear fuel until a permanent repository is constructed and operating. The initial request for a license is for a term of 40 years.” ISP License Application, p. 3-1.

- “ISP anticipates continued storage for approximately 60 years or until a final geologic repository is licensed and operating in accordance with the Nuclear Waste Policy Act (NWPA) of

1982, as amended.” ER, Rev. 2, p. 1-2.

- “ISP anticipates the SNF would be stored at the CISF for 60-100 years before a permanent geologic repository is opened consistent with the NRC’s Continued Storage Rule.”

ER, Rev. 2, p. 1-7.

- “The range of alternatives considered was based on the constraints of technical design requirements, the presence/absence of public and governmental support for a CISF, and on meeting the need to provide a safe option for storing SNF for 60-100 years or until a permanent geologic repository is licensed, constructed, and operating pursuant to the requirements of the NWPA.” ER, Rev. 2, p. 2-1.

These estimates of the operational life of the WCS SNF/GTCC facility fail to dispel legitimate questions as to whether WCS might become a *de facto* permanent repository, and whether its fitness and suitability for storing high-level spent nuclear fuel on the surface of the Texas desert for hundreds, or even thousands of years, or forever, should be considered under NEPA.

According to Dr. Gordon Thompson, it is “reasonable to conclude that storage of SNF for the indefinite future [defined as greater than a century] is a likely outcome of creating SNF in the United States.” Thompson 2018 Report at 5. Dr. Thompson further found that the U.S. DOE assumed in one no-action scenario in the 2002 Final Environmental Impact Statement for Yucca Mountain that institutional controls over at-reactor storage sites would cease after a century, and that “[s]imilar estimates could be made for specific ISFSIs, such as the proposed ISP facility.” Thompson 2018 Report at 12. Loss of institutional control means the loss of societal memory and dissipation of comprehension of the dangers of storage of SNF on unprotected, accessible slabs

in the desert, as well as the cessation of necessary management actions due to the lack of societal wherewithal and resources to perform them. Dr. Thompson pointed out that in § 7.2.2 of the 2002 Yucca FEIS, the Department of Energy “provides estimates of adverse impacts” where no institutional control is assumed to exist, demonstrating that such analysis is not only possible, but necessary. DOE's finding was that, once institutional control is lost with dry cask storage, the consequences would be catastrophic, after enough time passes. The same would be true at WCS's CISF.

The NEPA document must be required to investigate, analyze and discuss the circumstance where CISF storage is indefinitely the only option for a period beyond the first century of operations. A hundred years from now, the United States will be dramatically different, possibly much poorer and less capable of sustaining the ongoing expense of managing the radioactive wastes at WCS, or of moving them to a permanent geological repository. Political and economic considerations are hard to predict a century out, but ISP, itself, has left open the question of the ultimate length of the operating life of the CISF. Even if the Continued Storage GEIS shields ISP from having to justify or explain its spent fuel management practices for the first 60 years of “interim storage” operations—a proposition which Petitioners oppose--the realistic potential for ISP to have to continue in business beyond 60 years, up to 100 years, or even indefinitely and forever, must be addressed within the EIS. The design expectations of the CISF differ greatly from the design of a permanent geological repository, as do the geological and hydrological requirements. The prospect that the WCS CISF might become, by default, an “indefinite” or “permanent” storage facility is highly significant. The site specific analysis under NEPA analysis of the CISF changes the site-specific analysis to an entirely different, longer time

continuum, with commensurately altered expectations concerning the management of the waste. There is a likelihood of storage of SNF and GTCC waste at WCS for greater than a century, and so the WCS CISF must be considered for that purpose under NEPA, the Atomic Energy Act and the Nuclear Waste Policy Act.

Extended operation of the ISP CISF beyond the 100-year benchmark is a cumulative action and must be analyzed as such under NEPA.⁴⁶ Actions must be analyzed together in the same assessment if they “[a]utomatically trigger other actions which may require environmental impact statements,” “[c]annot or will not proceed unless other actions are taken previously or simultaneously,” or if they are “interdependent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1508.25(a)(1).

The cumulative action regulation directs agencies to consider the cumulative impact of action by an “agency (Federal or non-Federal) or person.” 40 C.F.R. § 1508.7. Private actions, even those which are not dependent on Federal assistance or a Federal permit, are encompassed in the cumulative action analysis, because “cumulative actions” are assessed together for their “cumulatively significant impacts.” 40 C.F.R. § 1508.25(a)(2). A cumulative impact “results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Id. § 1508.7.

“NEPA requires that where ‘several actions have a cumulative ... environmental effect,

⁴⁶A cumulative impact “is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

this consequence must be considered in an EIS.” *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1378 (9th Cir.1998) (quoting *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir.1990)); 40 C.F.R. § 1508.25(c)(3).

Accordingly, the scope of the EIS should include investigation and analysis under NEPA of the ISP CISF as a potential permanent repository, located at the surface in west Texas.

Contention 11: Having No Dry Transfer System And No Radioactive Emissions Mitigation Plan For ISP’s CISF Are Impermissible Omissions Under the AEA And Must Be Addressed Under NEPA

Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP’s plan to not have a dry transfer system (“DTS”) or other technological means of handling problems with damaged, leaking or externally contaminated SNF canisters or damaged fuel in the canisters at the WCS site, from the date of commencement of operations, contradicts the expectations of the Continued Storage GEIS, and the unanalyzed risks, and increased possibilities of minor to severe radiological accidents must be addressed in the Environmental Impact Statement. There is no plan for radiation emissions mitigation or radioactive releases at the CISF site. These refusals to contingently prepare for radiological problems at the site are a byproduct of ISP’s “start clean/stay clean” policy, are unrealistic and must be addressed in the EIS as well as in licensing conditions.

Basis for the Contention

Joint Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

ISP invokes the Continued Storage GEIS to excuse or prevent analysis of the

environmental impacts of constructing, operating and decommissioning the CISF from the standpoint of radiological dangers. But there are very real, unacknowledged or under-recognized radiological threats and problems posed by such things as high burnup fuel, as well as inherent dangers arising from the handling and transfer of spent nuclear fuel. The WCS license is for a site-specific ISFSI. ISP's "start clean/stay clean" policy must be analyzed in the environmental document. Failure to have a functioning DTS from inception of operations at the WCS site violates the Atomic Energy Act obligation to protect the public.

Facts Upon Which Joint Petitioners Intend to Rely In Support of the Contention

There are potential radiological dangers and consequential waste management concerns which will arise from the point of commencement of operations at the ISP CISF.

ISP plans to operate the CISF as a "start clean/stay clean" facility. This means

The facility is configured and will be operated as a "clean" facility. All components of the facility including the transport casks and storage canisters are designed to minimize the potential for any contamination. Continual radiological survey throughout the life of the facility will be performed to identify any possible contamination and to verify that the facility remains clean.

License Application p. 2-1. The plan further is for there to be very selective screening of SNF canisters at the reactor sites to determine which may be transported to ISP's facility in Texas, to consciously avoid taking on canisters with damaged or unstable fuel, external contamination or leaks. *Id.* The scheme is that the canisters, once sealed and shipped to the CISF, will remain stable and undamaged until transported away to a geological repository.

Consistent with the "start clean/stay clean" ideal, the Emergency Response Plan for the CISF contains no provisions for "emissions mitigation" (*i.e.*, reduction of emissions or releases to the surrounding environment of radiation and/or radioactive material from SNF as a result of

damage to SNF assemblies and/or SNF containers).

But there are complications in the receipt and oversight of spent nuclear fuel that are not fully acknowledged by ISP/WCS. Among the radiological red flags is the determination by Joint Petitioners' expert Robert Alvarez, "WCS recognizes the concerns and uncertainties surrounding high burnup spent nuclear fuel by stipulating in its license application that, 'all fuel with assembly average burnup greater than 45 GWd/MTHM [Giga-watt days per Metric Ton Heavy Metal] shall be canned inside the canister.'" Alvarez Report at 5. Alvarez points to the Nuclear Waste Technical Review Board's (NWTRB) 2010 warning that "the damaged and unknown state of cladding at any point of time during dry storage" raises "a possibility that accidents or handling could fail weakened fuel-rods" and that "the uncertain hydrogen embrittlement and delayed hydride cracking mechanism could result in additional failed cladding. The likelihood of the latter mechanism increases with time" and that "[a]ccordingly, cladding failure during dry storage and handling could present significant hazardous conditions to workers and especially if the used fuel needs to be handled."⁴⁷

Mr. Alvarez identified further problems with high-burnup fuel:

The uncertainties of storing a mix of high- and low burnup spent fuel in a canister are compounded by the lack of data on the long-term behavior of high burnup spent fuel. This problem was highlighted by the Nuclear Waste Technical Review Board, an expert panel that provides scientific oversight for the Energy Department on spent fuel disposal. That panel said there is little to no data to support dry storage and transport for spent fuel with burnups greater than 35 gigawatt days per metric ton of uranium. In a May 2016 letter to the Energy Department, the board raised elemental questions that should have been answered before the NRC and reactor operators took this leap of faith: "What could

⁴⁷Quoting from "United States Nuclear Waste Technical Review Board, Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel," December 2010, P. 117. <https://www.nwtrb.gov/docs/defaultsource/reports/eds-final.pdf?sfvrsn=8>

go wrong? How likely is it? What are the consequences?”⁴⁸ The board has yet to receive answers to those questions.

Alvarez Report p. 6-7.

To the overlay of HBU difficulty, Mr. Alvarez points out the coming management traffic jam at the reactor sites as well as at any participating CISF that packaging of SNF for geological repository disposal may require approximately 80,000 “small” canisters: “Existing large canisters can place a major burden on a geological repository—such as: handling, emplacement and post-closure of cumbersome packages with higher heat loads, radioactivity and fissile materials. Repackaging expenses rely on the transportability of the canisters, but more importantly on the compatibility of the canister with heat loading requirement for disposal.”⁴⁹

In 2012, Energy Department researchers concluded that “waste package sizes for the geologic media under consideration ...are significantly smaller than the canisters being used for on-site dry storage by the nuclear utilities.”⁵⁰ A nuclear industry study concluded in 2014 that “casks and canisters being used by the power utilities will be at least partially, and maybe largely, incompatible with future transport and repository requirements, meaning that some, if not all, of the [used nuclear fuel] that is moved to dry storage by the utilities will ultimately need to be repackaged.”⁵¹

⁴⁸Quoting from Nuclear Waste Technical Review Board, Letter to John Kotek, Acting Assistant Secretary for Nuclear Energy, U.S. Department of Energy, May 23, 2016. <https://www.nwtrb.gov/docs/default-source/correspondence/rce0516.pdf>

⁴⁹<http://www.beyondnuclear.org/storage/kk-links/Alvarez%20SNF%20at%20closed%20reactors%20rev%202.pdf>

⁵⁰*Id.*

⁵¹Chris Phillips, Ivan Thomas and Steven McNiven, “Nuclear Industry Study on the Feasibility of Standardized Transportation, Aging and Disposal Canisters for Used Nuclear Fuel,” Energy Solutions

Petitioners' expert Dr. Gordon Thompson⁵² observes that “[o]ne manifestation of the United States’ lack of a coherent SNF strategy is the lack of standardization of SNF containers.” Despite the DOE’s 2005 announcement that most of the SNF sent to the proposed Yucca Mountain repository would be delivered to the site “in standard canisters which are then placed in a waste package for emplacement, without handling individual fuel canisters,” there still is no federal policy to implement repackaging into standardized SNF containers at reactor sites or a CISF. Thompson 2018 Declaration at 8.

Besides the repackaging quandary caused by the imperatives of geological disposal, Dr. Thompson identifies the prospect of SNF damage en route to the CISF:

NRC’s GEIS acknowledges that SNF could be damaged prior to entry into storage, or during storage. The GEIS discusses that issue in connection with the provision of a capability to repackage SNF, saying, in part:

“As stated in Section 2.1.4, one reason DTSSs may be needed in the future is to reduce risks associated with unplanned events (e.g., the need to repackage spent fuel that becomes damaged or that becomes susceptible to damage while in dry cask storage). The NRC defines damaged spent fuel as any fuel rod or fuel assembly that can no longer fulfill its fuel-specific or system-related functions (NRC 2007). These functions include criticality safety, radiation shielding, confinement, and retrievability of the fuel. Appendix B of this GEIS describes spent fuel degradation mechanisms that could occur during continued storage. These include a mechanism (*i.e.*, hydride reorientation) in which high-burnup spent fuel cladding can become less ductile (more brittle) over time as cladding temperatures decrease. Taking actions (e.g., repackaging or providing supplemental structural support) can reduce risks posed by damaged fuel by

Federal EPC. WM2014 Conference, March 2-6, 2014, Phoenix, Arizona, USA.
<http://www.wmsym.org/archives/2014/papers/14011.pdf>

⁵²Dr. Thompson is a widely-acclaimed research scientist with a Ph.D. in mathematics. His *curriculum vitae*, 2018 Declaration and Declaration of 19 December 2013: Comments on the US Nuclear Regulatory Commission’s Waste Confidence Generic Environmental Impact Statement, Draft Report for Comment (September 2013),” which is cross-referenced to his 2018 Declaration, have all been filed in the ISP docket.

maintaining fuel-specific or system-related safety functions.”⁵³

A similar statement could be made in regard to damage to SNF containers. NRC’s GEIS acknowledges that the DTS design it describes, to illustrate present or anticipated capability to repackage SNF, “does not have the capability to handle damaged spent fuel.” Nevertheless, says the GEIS, “international experience provides a broad understanding of the technical feasibility of various methods for handling damaged fuel.” *In other words, the GEIS does not identify any available design of a DTS or equivalent system that could repackage SNF in the event of damage to SNF and/or an SNF container.*

Thompson 2018 Declaration at 6-7. Dr. Thompson also points out that a 2012 U.S. Department of Energy Report, from the Idaho National Laboratory, urges incorporation of a DTS function into the design work for development of a CISF:

“Recommendation 2: A repackaging and remediation capability should be integrated into the design of future facilities where UNF [used nuclear fuel = SNF] will be consolidated.

A key objective is to ensure that UNF is transported to its final destination, or a destination with the necessary repackaging capabilities, before the need for repackaging arises. Although presently small, the likelihood of the need for a DTS to enable retrieval of UNF for inspection or repackaging will increase as the duration and quantity of fuel in dry storage increases. Stored fuel will eventually require remediation and/or repackaging for transport. Any large-scale repackaging operations that may eventually be necessary can be more safely and effectively conducted at a consolidated facility.”⁵⁴

Thompson 2018 Declaration at 7.

Dr. Thompson recommends that licensing conditions for receipt of SNF at a consolidated-storage ISFSI “include the establishment at the site of a DTS or equivalent system, and the successful testing of that capability using actual damaged SNF.” He cites the following reasons, besides those discussed in the GEIS and the INL report, as calling for installation of

⁵³Continued Storage GEIS, § 2.2.2.1.

⁵⁴Carlsen and Raap, 2012, page 24.

DTS capability from the outset:

- (I) storage of comparatively aged SNF at the site;
- (ii) likely receipt at the site of damaged SNF assemblies and/or damaged SNF containers;
- (iii) likely occurrence, at the site, of damage to SNF assemblies and/or SNF containers; and
- (iv) the substantial lead time required to design, construct, and successfully test a DTS or equivalent system that could repackage SNF, including damaged SNF.

Thompson 2018 Declaration at 8.

Dr. Thompson concludes that an ISP CISF that lacks a DTS or equivalent capability to repackage SNF; fails to include in its Emergency Response Plan preparations for “emissions mitigation” (*i.e.*, reduction of emissions to the surrounding environment of radiation and/or radioactive material from SNF as a result of damage to SNF assemblies and/or SNF containers); and has the potential for SNF to remain at the site for the indefinite future, “would be likely to create significant adverse impacts on

- (I) the general welfare, as stated in the Atomic Energy Act;
- (ii) the common defense and security, as stated in the Atomic Energy Act; and/or
- (iii) environments and human populations affected by the facility

Thompson 2018 Declaration at 17-18.

Dr. Thompson further foresees that there will more likely than not be damaged SNF assemblies and containers arriving at the site as a result of accident, attack, or slow degradation. The absence of repackaging capability at the site, and the absence in the ISP Emergency Response Plan of preparations for emissions and releases mitigation would cause the affected SNF assemblies and/or SNF containers to remain at the site in a damaged condition, or to be transported elsewhere in a damaged condition. These circumstances, he cautions, would

result in “radiation exposure of workers and members of the public at dose levels exceeding permissible routine exposures, or at dose levels exceeding Protective Action Guides for emergency response; radioactive contamination of the surrounding environment, on-site and/or off-site, at levels requiring remedial action; and/or financial costs substantially exceeding the costs of routine operation of the ISP facility.” *Id.* at 18.

Dr. Thompson further predicts there would be damage to SNF fuel assemblies and/or containers at the ISP site, as a result of accident, attack or slow degradation. He foresees that likely modes of attack would include “initiation of a ‘cask fire’ involving sustained burning in air of the zircaloy cladding of SNF, causing release from SNF to the atmosphere of radionuclides including cesium-137;” “initiation of a ‘non-fire release’ involving release from SNF to the atmosphere of radionuclides but without the occurrence of a sustained zircaloy fire,” which he further states could occur from an accident or slow degradation. He continues, “Given the absence of repackaging capability at the site, and the absence in the ISP Emergency Response Plan of preparations for emissions mitigation, the affected SNF assemblies and/or SNF containers would remain at the site in a damaged condition, or would be transported elsewhere in a damaged condition.” Thompson 2018 Declaration at 18-19.

The expected impacts foretold by Dr. Thompson include

(I) radiation exposure of workers and members of the public at dose levels exceeding permissible routine exposures, or at dose levels exceeding Protective Action Guides for emergency response;

(ii) in the event of a cask fire, radioactive contamination of the surrounding environment at levels comparable to contamination levels in the vicinities of the Chernobyl reactor after its 1986 accident and the Fukushima reactors after their 2011 accident, thereby creating various adverse impacts on humans and their environment;

(iii) in the event of a non-fire release, radioactive contamination of the surrounding environment, on-site and/or off-site, at levels requiring remedial action; and/or

(iv) financial costs substantially exceeding the costs of routine operation of the WCS facility.

Thompson 2018 Declaration at 19.

Notably, the presence of a DTS and radiation emissions procedures are key factors in helping to prevent, or at least to protect against or mitigate, the worst effects Dr. Thompson described.

The Commission will issue a license under 10 C.F.R. Part 72 upon determining “that the application for a license meets the standards and requirements of the Act and the regulations of the Commission, and upon finding that “[t]he applicant's proposed operating procedures to protect health and to minimize danger to life or property are adequate.” 10 C.F.R. § 72.40(a)(5). The Commission further must find that “[t]here is reasonable assurance that . . . [t]he activities authorized by the license can be conducted without endangering the health and safety of the public.” 10 C.F.R. § 72.40(a)(13).

Moreover, 10 C.F.R. § 72.98 directs that:

(b) The potential regional impact due to the construction, operation or decommissioning of the ISFSI or MRS must be identified. The extent of regional impacts must be determined on the basis of potential measurable effects on the population or the environment from ISFSI or MRS activities.

(c) Those regions identified pursuant to paragraphs (a) and (b) of this section must be investigated as appropriate with respect to . . . (3) Any special characteristics that may influence the potential consequences of a release of radioactive material during the operational lifetime of the ISFSI or MRS.

The ER, SAR and Emergency Response Plan lack awareness or analysis of the potential regional impacts and safety plans addressing surrounding populations and the environment, given the distinct prospect of the possible occasional arrival of damaged, externally contaminated or leaking SNF casks or canisters, the chances that fuel damage and/or cask/canister damage and

leakage can occur at the WCS site and can become long-term, unremediated problems.

Contention 12: ISC/WCS Is Disqualified From And/Or Has Waived Applicability Of The Continued Storage Generic Environmental Impact Statement To the Licensing Review

The proposed WCS CISF does not qualify for the exclusions from NEPA scrutiny conferred by the Waste Storage GEIS. Consideration of severe accidents, Environmental Justice, terrorism and sabotage and related mitigation in the transportation and operations elements of the ISP/WCS CISF plan may not be treated as generic issues and excused from consideration under NEPA.

A. Basis for the Contention

The “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel: Final Report, Volume 1”⁵⁵ (“Continued Storage GEIS”) allows an applicant to bypass NEPA analysis of certain aspects of a nuclear waste storage proposal. Here, various aspects of plant operations and transportation cannot be treated as generic issues within the Environmental Impact Statement or segmented from it because the WCS project departs significantly from the Continued Storage GEIS presumptions and WCS has waived GEIS applicability. Moreover, the NRC regulation applying the continued storage rule does not exempt Independent Spent Fuel Storage Installations (ISFSI) configured as is WCS’s from NEPA analysis.

B. Facts Upon Which Petitioners Intend to Rely at Trial

1. The CISF Is Not Legally Authorized

Neither 10 C.F.R. Part 72 nor the NWPA legally authorize the WCS CISF. The NWPA authorizes either an independent spent fuel storage installation (“ISFSI”) only at a reactor site, 42

⁵⁵Located at <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr2157/v1/>

U.S.C. § 10152, or a monitored retrievable storage facility (“MRS”) operated by the U.S. DOE, 42 U.S.C. § 10161. The WCS CISF is neither, and for that reason alone, is not covered by the Continued Storage GEIS.

2. The WCS CISF Is Disqualified from Relying on the Waste Storage Rule GEIS Because It Differs Significantly from GEIS Presumptions

In the Environmental Report, WCS states:

The materials that would be transported to and from the CISF are well within the scope of the environmental impacts previously evaluated by the NRC in its GEIS for continued storage of spent nuclear fuel, NUREG-2157 (NRC, 2014a). Because these impacts have been addressed in a previous NRC EIS, no additional mitigation measures are proposed.

ER § 5-1-2, p. 5-2.

WCS proposes to have no means of dealing with the arrival of seriously leaky, cracked, breached or externally contaminated casks that arrive at its facility. Moreover, WCS’ explicit policy will be to select from nuclear reactor sites only stable canisters, free from problems of radiation leaks, contamination or structural problems.

Considerable evidence proves that WCS will not have the ability to handle leaky, contaminated or structurally failure casks:

- “The WCS CISF design, as presented in the SAR, does not employ a spent fuel pool or other bare fuel handling capability.” SAR § 1.1, p. 1-2.
- “The Cask Handling Building is designed to handle canisterized material and does not have the capability to handle bare fuel.” SAR § 1.2.3, p. 1-5.
- “A recovery method for the unlikely loss of confinement event is independent of any bare fuel handling facilities.” SAR § 3.3.7.1, p. 3-20.
- “Additionally, the WCS CISF does not have a SNF pool or any associated wastes

generated as a result of pool operations or pool maintenance.” SAR § 6, p. 6-1.

- WCS’s Emergency Response Plan does not include arrangements and procedures for emissions mitigation (*i.e.*, reduction of emissions to the surrounding environment of radiation and/or radioactive material from SNF as a result of damage to SNF assemblies and/or SNF containers).

WCS recovery preparations contradict the GEIS assumption that the facility will have a dry transfer system (“DTS”) to provide technological protection of addressing cask problems from the earliest stages of facility operations.⁵⁶ A dry transfer system technologically enables retrieval of spent fuel for inspection or repackaging without the need to return it to a spent fuel pool. Continued Storage GEIS at p. xxxi.

These assumptions in the Continued Storage GEIS find no corresponding intention in the WCS application:

- A DTS will be built at each ISFSI location during the long-term storage timeframe [*i.e.*, within a century after opening the SNF site] to facilitate spent fuel transfer and handling.

Continued Storage GEIS, § 1.8.3, p. 1-16.

- The NRC assumes replacement of spent fuel canisters and casks at least once per 100 years, consistent with assumptions made in the Yucca Mountain Final EIS (DOE 2008). *Id.*

⁵⁶From “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel,” NUREG-2157 (“Continued Storage GEIS”) p. 1-15: “With respect to dry cask storage, the NRC assumes that the licensee uses a DTS during long-term and indefinite storage timeframes to move the spent fuel to a new dry cask every 100 years. Similarly, the NRC assumes that the DTS and the ISFSI pad are replaced every 100 years. For an ISFSI that reaches 100 years of age near the end of the short-term storage timeframe, the NRC assumes that the replacement would occur during the long-term storage timeframe.”

And at p. 1-16: “A DTS will be built at each ISFSI location during the long-term storage time frame to facilitate spent fuel transfer and handling.”

○ The ISFSI facility and dry transfer system itself are also replaced every 100 years. *Id.*

According to the Continued Storage GEIS, there is no DTS capability anywhere in the United States, including at any of the nuclear plant sites from which spent nuclear fuel shipments to WCS will originate. *Id.* at p. 2-20.⁵⁷

The WCS scheme is oblivious to these assumptions. The company asserts, instead, that “The authorized storage systems are designed to provide long-term storage of SNF. The canister materials are selected to protect against degradation during the storage period, including the application of system specific aging management programs.” SAR § 3.2, p. 3-5. To WCS, the canisters are near-infinitely manageable by means of evolving aging management plans:

Currently, the NRC has licensed and approved SNF storage systems owned by *TN Americas*, *NAC International*, *HOLTEC International*, and *EnergySolutions*. Each of these systems is engineered to safely store spent fuel for 50 years or longer and *this time can be extended almost indefinitely through rigorous inspections, aging management programs, maintenance, and re-licensing*.

ER, § 2.2.2.1, p. 2-5. (Emphasis added). This is but another contradiction between the WCS scheme and the oversight and maintenance expectations of the GEIS. It represents a major conflict between regulation and the planned project.

No thin-wall canister can be inspected or repaired, and all of the canisters listed by WCS for use are thin-wall canister systems. There are cracking, wall thinning repair and repackaging issues with thin-wall canisters.⁵⁸ See Sierra Club comments to NRC proposed rule for regulatory

⁵⁷*Id.* at p. 2-20: “Although there are no dry transfer systems (DTSSs) at U.S. nuclear power plant sites today, the potential need for a DTS, or facility with equivalent capability, to enable retrieval of spent fuel from dry casks for inspection or repackaging will increase as the duration and quantity of fuel in dry storage increases.”

⁵⁸Sierra Club comments to NRC proposed rule for regulatory improvements for decommissioning power reactors, Docket NRC-2015-0070, March 2016 (NRC ML16082A004) <https://www.nrc.gov/docs/ML1608/ML16082A004.pdf>

improvements for decommissioning power reactors, Docket NRC-2015-0070, March 2016 (NRC ML16082A004).⁵⁹ Moreover, Kris Singh, President of Holtec International, a leading canister manufacturer that is seeking an NRC license for the proposed Holtec Consolidated Interim Storage Facility approximately 40 miles from WCS, has publicly states that even cracks in canisters could be located, repairs in the face of exposure to millions of curies of radionuclides would be impractical, since it would introduce another vulnerability for cracking.⁶⁰ Here's transcript and video of Singh's statements. The reference to the Singh video is also in our above Sierra Club comments to the NRC

3. The WCS Project Is Site-Specific

The Texas Commission on Environmental Quality (“TCEQ”) analyzed the challenges associated with creating a consolidated SNF and high-level radioactive waste interim storage facility in Texas in its March 2014 “Assessment of Texas's High Level Radioactive Waste Storage Options” (TCEQ, Radioactive Materials Division, March 2014), which is Attachment 1-2 to the WCS Environmental Report. The TCEQ called for a solution other than storage of radioactive waste at Texas’ four nuclear power plants “in a community that was willing to host such a facility,” taking “into account current successfully sited and built radioactive waste disposal facilities such as the Waste Isolation Pilot Plant in New Mexico for transuranic waste and the Low Level Radioactive Waste Facility in Texas.” (TCEQ 2014), cited at ER § 2.3.1, p. 2-10.

In the Assessment, the TCEQ candidly conceded that licensing of a Texas SNF storage

⁵⁹<https://www.nrc.gov/docs/ML1608/ML16082A004.pdf>

⁶⁰ Video of Singh statement at <https://youtu.be/euaFZt0YPi4>

project would be site-specific:

A centralized interim storage (or away-from-reactor) facility would require a site specific license under 10 CFR Part 72 for 40 years initially and an option to renew for another 40 years. The license application would not be able to use the generic environmental impact statement from the NRC waste confidence rule, the waste confidence rule, or the general license found in 10 CFR part 72 subpart K (38).

ER Att. 1-2, p. 34.

Moreover, the delivery and receipt procedures planned for the CISF at WCS do not contemplate access to or availability of a dry transfer system in the event of SNF cask damage, fuel damage or leakage, or external contamination, and WCS touts the use of aging management plans to avoid the need to replace canisters even at the end of a century of usage. These are serious departures from the facility envisioned in the Continued Storage GEIS, and the WCS scheme falls outside of NRC regulation that allows reliance on the GEIS.

By 10 C.F.R. § 51.23(a), the NRC “has generically determined that the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor are those impacts identified in NUREG–2157,” and by § 51.23(b), “[t]he environmental reports described in . . . § 51.61 are not required to discuss the environmental impacts of spent nuclear fuel storage in a reactor facility storage pool or an ISFSI for the period following the term of the reactor operating license, reactor combined license, or ISFSI license.” The WCS CISF does not qualify under NRC regulations as an ISFSI, thus WCS is required to discuss the environmental impacts of its storage arrangements far more fully than was done in the Environmental Report.

This expanded NEPA discussion must include a transportation component addressing the environmental impacts associated with a conjectured 20-year, 3,000-shipment transportation

campaign involving high-burnup and low-burnup fuel delivered from sites where canisters may have only been in use for as little as 8 years, instead of 50 or more years under the SAFSTOR decommissioning regime; much greater detail on the overall fuel characteristics of the thousands of bundles to be received for storage, and the placement of different fuel types within the same canister; a realistic appraisal of accident potential and consequences potential in a greatly expanded discussion of scenarios where there is release of radioactivity from leaky, deteriorated, breached or damaged canisters.

4. The NRC's Continued Storage Rule does not apply to ISFSIs

The NRC's implementation of the Continued Storage rule is found at 10 C.F.R. § 51.23.

(a) The Commission has generically determined that the environmental impacts of continued storage of spent nuclear fuel beyond the licensed life for operation of a reactor are those impacts identified in NUREG-2157, "Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel."

(b) The environmental reports described in §§ 51.50, 51.53, and 51.61 are not required to discuss the environmental impacts of spent nuclear fuel storage in a reactor facility storage pool or an ISFSI for the period following the term of the reactor operating license, reactor combined license, or ISFSI license. The impact determinations in NUREG-2157 regarding continued storage shall be deemed incorporated into the environmental impact statements described in §§ 51.75, 51.80(b), 51.95, and 51.97(a). The impact determinations in NUREG-2157 regarding continued storage shall be considered in the environmental assessments described in §§ 51.30(b) and 51.95(d), if the impacts of continued storage of spent fuel are relevant to the proposed action.

© This section does not alter any requirements to consider the environmental impacts of spent fuel storage during the term of a reactor operating license or combined license, *or a license for an ISFSI in a licensing proceeding.*

(Emphasis added).

10 C.F.R. § 51.23(c) takes facilities such as WCS outside the Continued Storage Rule.

5. The Financing Mechanism for WCS Diverges Sharply from the PFS Prototype of the GEIS

ISP/WCS has clearly stated that Federal funding from the Department of Energy is a core

necessity of the construction, operation and decommissioning of the CISF, whereas Private Fuel Storage, the prototype for the GEIS, was intended to operate based on funds collected from ratepayers through utility bills and direct payments by utilities. The NRC, in response to comments made in the Continued Storage GEIS rulemaking, stated that “Licensees are required to provide funding for any onsite spent fuel storage costs under 10 CFR 50.54(bb) and 10 CFR 72.22(e). Under the NWRPA, licensees are also required to pay a fee into the Nuclear Waste Fund, which is to be used to fund permanent disposal of spent fuel; DOE recently suspended collection of the fee in response to the decision in *NARUC v. DOE*.” GEIS p. D-407. That is not what WCS conjectures in its proposal.

The NRC further stated in comment responses in the GEIS that 10 CFR § 50.54(bb) “requires licensees to submit written notification to the Commission for its review and approval of the program by which the licensee intends to manage and provide funding for the management of all irradiated fuel at the reactor following permanent cessation of operation of the reactor until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy. Therefore, the financial plan and financial burden of continuing spent fuel storage during decommissioning is already analyzed within the NRC’s regulatory framework.” GEIS p. D-502.

ISP/WCS’s proposed reliance on Federal funding sharply diverges from the funding arrangements the underlie the GEIS’s PFS prototype. ISP’s proposal involves a funding stream from DOE for which there is no federal statutory authorization. This creates an issue of fact as a divergence from the GEIS expectation.

Contention 13: Any Anticipated Nuclear Reprocessing Activity Must Be Disclosed In The EIS And Included in Cumulative Effects Analysis

The WCS CISF, by aggregating SNF in west Texas, would provide a stockpile of spent

fuel for purposes of reprocessing. The return of spent fuel reprocessing is supported by the Texas Commission on Environmental Quality. The radioactively dangerous industrial activity of reprocessing must be addressed, analyzed and disclosed in a discussion of cumulative environmental impacts of the SNF waste storage project.

A. Basis for the Contention

The sponsors of the Holtec Consolidated Interim Storage Facility for SNF and GTCC waste, which would be located only 40 miles from the ISP/WCS facility, are advocating for the initiation of nuclear fuel reprocessing activity in the region by using SNF deliveries as feedstock. If one or both CISFs are licensed and constructed, there is business community support in both states for one or more reprocessing facilities in the area.

B. Facts Upon Which Petitioners Intend to Rely at Trial

In a 2015 slide show given by a Holtec representative to the New Mexico State Legislature,⁶¹ Holtec represented that the CISF “Provides the most flexibility for recycling, research, and disposal” and “Dispels Arguments There Are No Solutions For SNF” and that one of the nuclear “waste solutions” would be “reprocessing SNF.” And in a July 2, 2017, Los Angeles Times article, “1,800 tons of radioactive waste has an ocean view and nowhere to go,”⁶² Hobbs, New Mexico mayor Sam Cobb, a voting member of the Eddy-Lea Energy Alliance LLC (“ELEA”) board which was responsible for bringing Holtec to New Mexico, stated, “We believe if we have an interim storage site, we will be the center for future nuclear fuel reprocessing.”

⁶¹www.nmlegis.gov/handouts/RHMC_080216_Item_5

⁶²<http://www.latimes.com/local/california/la-me-stranded-nuclear-waste-20170702-htmlstory.html>

Further, in 2008 the U.S. Department of Energy published a “Draft Global Nuclear Energy Partnership Programmatic Environmental Impact Statement” (“GNEP PEIS;” DOE/EIS-0396),⁶³ in which it expressed a preference for reprocessing of spent nuclear fuel under U.S. auspices as a supposed nonproliferation policy. GNEP proposed a framework for nuclear fuel services to provide the means for the U.S. to develop nuclear enrichment or reprocessing facilities to serve other countries’ nuclear programs. GNEP PEIS p. I-3. The proposed Holtec site, then owned by Eddy-Lea Energy Alliance, was actively considered by GNEP for use as a CISF and possibly as a reprocessing complex.

Reprocessing is controversial because it risks nuclear weapons proliferation (by separating out weapons-usable plutonium); it is environmentally destructive; and it is very expensive. The atmospheric and surface water releases of radioactivity by reprocessing are large scale. French and United Kingdom reprocessing facilities, taken together, after 70 years of routine operation (with no accidents, leaks, spills, etc.), would equal the Chernobyl catastrophe in scale of environmental releases.

Reprocessing, whereby the aim is to reclaim fissile uranium and plutonium from spent fuel, is a controversial process. It involves uses of acidic chemicals to separate heavy metals, and in the process extremely radioactive spent nuclear fuel is turned into a liquid, increased in volume and all of the residues are high-level radioactive wastes. Slideshow, “Spent Nuclear Fuel Reprocessing,” Dr. Terry Todd, Idaho National Laboratory (2008), slides 2, 9-11, 13.⁶⁴ In the

⁶³ Available at https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDo nt/EIS-0396-DEIS-2008.pdf

⁶⁴ https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjri9nS_7jdAhWFw4MKHRKDALEQFjAAegQIBBAC&url=http%3A%2F%2Fwww.state.

glossary of the Environmental Report,

Besides the association of reprocessing by Holtec and ELEA with the aggregation of SNF at Holtec, spent fuel storage at close by WCS would also supply feedstock for reprocessing.

Reprocessing was discussed very favorably in the Texas Commission on Environmental Quality's special report to Governor Rick Perry, "Assessment of Texas's High Level Radioactive Waste Storage Options" (March 2014) by the agency's Radioactive Materials Division (appears as Attachment 1-2 to the WCS Environmental Report)::

Even though the reprocessing option is not available in the U.S. due to higher costs and the uncertainty of federal government funding, the reprocessing option should still be considered as a possible future choice. Advances in reprocessing technology or other changes, such as policy or economic, may make reprocessing more advantageous than the once-through or the "throw away" cycle. The unused fissile material in the SNF represents a considerable amount of energy that could change the view of SNF from a waste to an energy resource. Additionally, specific isotopes that are useful in research, industrial processes, and medicine are contained in the SNF and could be isolated from the other fission products in a reprocessing facility. Disposing of SNF in a non-retrievable manner may be viewed as a mistake by future generations. Storing or disposing of the SNF in an easily retrievable but safe and environmentally sound manner should be considered as one option in managing this waste.

Id. p. 10.

Finally, on October 10, 2018, the U.S. Department of Energy published a "Request for Public Comment on the U.S. Department of Energy Interpretation of High-Level Radioactive Waste," soliciting public input on a re-interpretation of the Atomic Energy Act so that wastes generated from nuclear reprocessing activity would no longer be considered "high-level waste" if it does not exceed concentration limits for Class C low-level radioactive waste as set out in 10 C.F.R. § 61.55; or does not require disposal in a deep geologic repository and meets the

[nv.us%2Fnucwaste%2Flibrary%2Freprocessing%2Fncrcseminarreprocessing_terry_todd.pdf&usg=AOvVaw2V3dovet8vXdUz7VzNZo-Y](https://www.nv.us%2Fnucwaste%2Flibrary%2Freprocessing%2Fncrcseminarreprocessing_terry_todd.pdf&usg=AOvVaw2V3dovet8vXdUz7VzNZo-Y)

performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable regulatory requirements. While the DOE's proposed re-interpretation does not yet have the stature of a rulemaking, a declassification/deregulation of reprocessing waste would alter the cost structure for its disposal and would give a significant economic boost to a resumption of dangerous and dirty reprocessing in the nuclear corridor along the Texas/New Mexico border.

Petitioners assert that inasmuch as reprocessing is a likely pursuit once the WCS CISF commences operation, and will have significant support from both WCS and the Holtec CISF developers and the larger regional business community, nuclear reprocessing should be investigated and discussed under NEPA as a cumulative impact of the WCS CISF development.

C. Applicable Legal Standards

Under NEPA, an EIS "must analyze not only the direct impacts of a proposed action, but also the indirect and cumulative impacts of 'past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.'" *Colorado Env'tl. Coalition v. Dombeck*, 185 F.3d 1162, 1176 (10th Cir.1999) (quoting 40 C.F.R. § 1508.7⁶⁵); see also 40 C.F.R. § 1508.25(c) (stating that the "scope" of an EIS includes consideration of "cumulative" impacts).

The types of impacts that must be considered include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems),

⁶⁵40 C.F.R. § 1508.7 of the CEQ Regulations define "cumulative impact," in full, as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

aesthetic, historic, cultural, economic, social, or health [effects].” 40 C.F.R. § 1508.8. And “[a]gencies . . . have a duty to discuss in the FEIS impacts that are reasonably foreseeable.” *Utahns for Better Transp. v. U.S. Dept. of Transportation*, 305 F.3d 1152 (10th Cir. 2002) (citing *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir.1992)).

The scope of an agency's NEPA inquiry must include both “connected actions” and “similar actions.” 40 C.F.R. § 1508.25(a)(1), (3). Actions are “connected” if they trigger other actions, cannot proceed without previous or simultaneous actions, or are “interdependent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1508.25(a)(1). And actions are “similar” if, “when viewed with other reasonably foreseeable or proposed agency actions, [they] have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.” 40 C.F.R. § 1508.25(a)(3).

NEPA is “essentially procedural,” designed to ensure “fully informed and well-considered decision[s]” by federal agencies. *Vt. Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 558 (1978). “NEPA itself does not mandate particular results’ in order to accomplish [its] ends. Rather, NEPA imposes only procedural requirements on federal agencies with a particular focus on requiring agencies to undertake analyses of the environmental impact of their proposals and actions.” *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756-57 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)). In preparing an EIS, an “agency need not foresee the unforeseeable, but . . . [r]easonable forecasting and speculation is . . . implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as ‘crystal ball inquiry.’” *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092,

156 U.S.App. D.C. 395 (D.C. Cir. 1973). While the statute does not demand forecasting that is “not meaningfully possible,” an agency must fulfill its duties to “the fullest extent possible.” *Id.*

A reprocessing facility associated with, and dependent on the existence of WCS as a source of supply of spent nuclear fuel falls within the realm of “cumulative actions” delineated in the CEQ regulations. See 40 C.F.R. § 1508.7.⁶⁶ Actions must be analyzed together in the same assessment if they “[a]utomatically trigger other actions which may require environmental impact statements,” “[c]annot or will not proceed unless other actions are taken previously or simultaneously,” or if they are “interdependent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1508.25(a)(1).

The cumulative action regulation directs agencies to consider the cumulative impact of action by an “agency (Federal or non-Federal) or person.” 40 C.F.R. § 1508.7. Private actions, even those which are not dependent on Federal assistance or a Federal permit, are thus encompassed in the cumulative action analysis, because “cumulative actions” are assessed together for their “cumulatively significant impacts.” 40 C.F.R. § 1508.25(a)(2). A cumulative impact “results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” *Id.* § 1508.7.

“NEPA requires that where ‘several actions have a cumulative ... environmental effect, this consequence must be considered in an EIS.’” *Neighbors of Cuddy Mountain v. U.S. Forest*

⁶⁶A cumulative impact “is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

Serv., 137 F.3d 1372, 1378 (9th Cir.1998) (quoting *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir.1990)); 40 C.F.R. § 1508.25(c)(3).

In a cumulative impacts analysis, the lead NEPA agency must take a “hard look” at all actions. “General statements about ‘possible effects’ and ‘some risk’ do not constitute a ‘hard look’ absent a justification regarding why more definitive information could not be provided.” *Neighbors of Cuddy Mountain*, 137 F.3d at 1380. “[S]ome quantified or detailed information is required. Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.” *Id.* at 1379.

The burden that a plaintiff must bear to assert the need for cumulative impacts analysis is not an onerous one. In *City of Carmel-By-The-Sea v. U.S. Department of Transportation*, 123 F.3d 1142 (9th Cir.1997), plaintiffs met their burden in raising a cumulative impacts claim under NEPA despite failing to specify a particular project that would cumulatively impact the environment along with the proposed project. *Id.* at 1161. This was because “the [Defendants] failed first; they did not properly describe other area projects or detail the cumulative impacts of these projects.” *Id.*

Under *City of Carmel*, it is not necessary for the Petitioners to demonstrate what cumulative effects would occur. It falls to the lead agency, not the public, to ascertain the cumulative effects of a proposed action under NEPA to “ensure[] that the agency will inform the public that it has indeed considered environmental concerns in its decision making process.” *Balt. Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97, 103 S.Ct. 2246 (1983).

Contention No. 14: NEPA Requires Significant Security Risk Analyses for the Spent Nuclear Fuel and Greater-Than-Class-C Wastes Proposed for Interim Storage, And Associated Transportation Component, at ISP/WCS's Texas Facility

A. Basis for the Contention

Petitioners hereby incorporate all of the claims, allegations and assertions set forth above as if fully rewritten herein.

The NRC should, under NEPA, consider the risks, impacts and safety/security arrangements for the ISP/WCS CISF SNF transportation effort, given the long historical record and experience derived from research and litigation over the proposed Yucca Mountain geologic facility. There is a constantly-changing threat environment that radiological shipments to waste storage facilities such as ISP/WCS and a consequent need to plan for an evolving variety of design-basis threats (DBTs) and beyond-design-basis-events (BDBE). In-transit risks are a central part of the equation and need to be addressed. To “stock” the ISP CISF with SNF and GTCC wastes, the materials must be transported there, and the lack of details on waste conveyance in the WCS Environmental Report belies the centrality of transportation to the implementation of the project.

B. Facts Upon Which Joint Petitioners Intend to Rely at Hearing

The only substantive references to terrorism or sabotage appearing in WCS's application documents are in the SAR:

In accordance with 10 CFR 72.184, the WCS CISF Safeguards Contingency Plan addresses security responses to a spectrum of threats. For planning purposes, these threats include generic and postulated, site-specific contingencies, to include attempted radiological sabotage. Contingency event categories include: (1) Loss of Security Effectiveness, (2) Threats, and (3) Adversary Actions. The Safeguards Contingency Plan provides a Responsibility Matrix that details specific Security Force actions for neutralizing each contingency event. WCS CISF Security contingency planning involves detailed response procedures, and assistance from local law

enforcement, when requested.

As stipulated in Appendix B to 10 CFR 73.55, provisions for training and qualifying Security Force members are contained in the WCS CISF Guard Training and Qualification (T&Q) Plan. The T&Q Plan identifies all crucial security tasks and the associated Security Force positions that must be trained and qualified in the respective crucial task. In addition to initial and recurring Security Force training requirements, the T&Q Plan also describes a screening program to determine if the Security Force member's background and physical/mental qualifications meet criteria defined in this plan.

SAR § 13.7, p. 13-43.

There is no reference nor analysis in any of the application papers to the risks of terrorism and/or accident during the anticipated transportation of SNF/GTCC wastes.

Joint Petitioners bring to the notice of the NRC the report of their expert, Dr. James David Ballard,⁶⁷ contemporaneously filed with this Petition to Intervene (“Ballard Report”).

Petitioners also rely on the 2018 and 2013 Declarations of Dr. Gordon Thompson.

⁶⁷As reflected in his *curriculum vitae*, also filed in this proceeding, Dr. Ballard holds a Ph.D. in sociology and has taught university-level courses for more than 21 years and since 2002, at California State University-Northridge, most recently in the CSUN Department of Criminology and Justice Studies. His doctoral dissertation addressed terrorism and political policy. He has extensively researched and published, and his specialization areas include, among other topics, energy security, nuclear waste security and terrorism. Dr. Ballard has authored many essays on the subject of contemporary terrorism and sabotage in the wake of 9/11, as depicted in his CV. He has consulted extensively with the State of Nevada to assist Nevada in its legal case against the siting of Yucca Mountain as a geological repository for high-level nuclear waste. He has consulted in the drafting of formal comments to the NRC on the “Waste Confidence Generic Environmental Impact Statement Draft Report for Comment (NUREG-2157), September 2013,” for the States of Vermont and Connecticut. He testified before the U.S. Senate on “Terrorism Risk and the Transportation of Spent Nuclear Fuel and High Level Radioactive Waste” in 2008. He testified before the National Academies of Science in 2002 on “Nuclear Waste Transportation: Lessons from 9/11/2001 Applicable to Nuclear Waste Transportation Program Planning, Security, and Emergency Response.” He also testified before the United States Senate, Committee on Energy and Natural Resources, 107th Congress regarding S. J. Res.34 Approving the Site at Yucca Mountain, Nevada, for the Development of a Repository for the Disposal of High-level Radioactive Waste and Spent Nuclear Fuel, Pursuant to the Nuclear Waste Policy Act of 1982. Dr. Ballard is eminently qualified to offer his observations on security and risk management associated with the transportation, storage and disposition of our most dangerous radioactive wastes.

1. Expert Opinions and Conclusions of Dr. James David Ballard

According to Dr. Ballard, Human-Induced Event (“HIE”) “risks are present” and “represent a robust articulation of potentials for the end of the fuel cycle operations necessary to stock the proposed facility and that these events represent a range of potentials far exceeding the very limited vision of risks set forth in a traditional design basis threat (DBT) normally used to frame the risk of such attacks.” Ballard Report at 6-7. Dr. Ballard sees the nuclear industry as a “target rich environment” and its facilities as “potential and recognizable targets.” *Id.* He notes that “Trying to isolate analysis for the CISF to the end point of the shipment routes is problematic, shortsighted and not acceptable safety/security procedures.” *Id.* at 8.

According to Dr. Ballard, the parameters of the wastes delivered to WCS may become more diverse in the future:

DOE’s own jurisdictional SNF, HLW and GTCC materials are not specifically a part of the ISP CISF proposal at this time but ISP’s proposal suggests plans for additional modifications for waste limits and given 10 CFR, Section 72, which may in the future include wastes of a very different type than articulated in this version of the proposal. The Yucca Mountain experience has offered a lesson on DOE and wastes: *The community near the CISF should expect mission creep as to additional forms of wastes if DOE is involved and additional waste shipment streams must be anticipated. One example was the evacuation of wastes from WIPP to the existing waste facilities in Andrews County. After the extensive contamination experienced at WIPP due to mistakes in packaging, suspect packages were sent to this facility.* With such ambiguity as to exactly what will be actually stored at the proposed CISF, the presentation herein added DOE facilities to be on the conservative side of analysis. Much like Holtec, ISP uses the most desirable waste streams for their proposal. They excluded liquid, transuranic and other more problematic waste streams that could pose additional safety and security concerns, at least for the initial approval process.

Ballard Report p. 12 fn. 30. Indeed, since 2014, WCS has continuously stored dozens of unexpected and unlicensed containers of ignitable radioactive wastes from the Los Alamos National Laboratory, bound for the Waste Isolation Pilot Project a short distance from WCS.

The waste packages were ordered to be kept from reaching specified internal temperatures. After repeatedly trying to obtain permission from the NRC for a temporary solution to reduce the excessive heat buildup that was taking place in the wastes, WCS in June 2014 backfilled the large overpacks of 11 waste containers with pea gravel, moved the overpacks into WCS's Federal Waste Facility and covered them with sand. Letter, NRC to WCS (ML17017A194) (January 18, 2017).

Dr. Ballard notes that the wastes bound for WCS will generally need wet storage at first (SNF being the bulk of the wastes), potentially dry storage at the power plants and ultimately, will be transported to the CISF. “[L]ogically such shipments will be subject to HIE risks over the lifespan of the transport and stocking effort. DBE’s for the transport and storage are also necessary to define, understand and communicate, so that communities along the transportation routes and at the initiation and destination points, are risk informed.” Ballard Report at 13-14. He has determined that “ISP does not address the complexity of, or risks of the range of HIE in their proposal” and that “This lack of the ability to perceive systematic risk complexity for a proposed interim storage facility may well underestimate the impacts of a radiological event....” *Id.* at 14. The expert recommends that a “programmatic transportation inclusive Environmental Impact Statement (EIS) should be initiated prior to the proposal process and the totality of the shipment infrastructure that will supply this new storage facility.” A failure to conduct such a EIS could leave ISP “vulnerable to liability in the event of a radiological emergency at the storage site, but perhaps also while in-transit wastes are moving towards that destination. The ISP proposal is currently insufficient to address the transportation issue for waste movements to the proposed CISF on any level.” *Id.* at 15. His finding is based on what he calls ISP’s “single

variable based risk profile” that can be overwhelmed by under-prediction of design basis events and design basis threats in various ways, as by under-predicting the possibilities for disaster, failing to consider compounding and cascading events, and exacerbation by human error. Dr. Ballard counsels against “risk blindness” and warns of the “atrophy of vigilance as years, even decades, of everyday experience with minor operational issues lead to a loss of attention to safety and security.” *Id.*

Dr. Ballard considers the shipment of SNF and GTCC wastes to west Texas to pose prime targets for human-induced events because of a possible attraction to international groups, domestic groups, and “lone wolf” attacks, because there is considerable symbolic value to such targets. He cautions that “Highly radioactive wastes like SNF and GTCC are not normal commodities; they represent a different type of risk depending on which waste is being analyzed and should be recognized as such.” *Id.* at 18-19.

Dr. Ballard zeroes in on WCS’s “start clean/stay clean” policy “as a circumstance where, with the possible complicity of the NRC Staff, WCS is allowed to “limit the need for facility infrastructure that may be potentially problematic.” According to Dr. Ballard, if ISP, like Holtec in New Mexico, decides to return arriving casks with defects, contamination or leakage to the originating reactor sites, it “offloads the potential contamination and thus endangers those transportation corridor communities all the way back to the origination point. The morality of this philosophy and the liability of such actions are highly suspect.” *Id.* at 26.

Dr. Ballard raises concerns that the WCS licensing proposal does not address the potential that a permanent repository may never open, and if it does open in the future, when that is expected and how wastes will be shipped to that repository. *Id.* He suggests that there are

major questions of liability given WCS's unique position in the end of fuel cycle operations, questions about waste title, and that unanswered questions in the license application are left unanswered because of the paucity of analysis of the programmatic implications of the proposed CISF. "The proposal offers few specifics, hides behind the secrecy of security regulations propagated by the NRC; the partnership limits its potential liability by legal ownership status (LLC) and uses other legal protections to give the NRC what they wish to hear. NRC in procedure and ISP in application do not offer a cold eyed assessment of the issues. Not considering issues that communities will need to be apprised of to understand the risks, let alone give consent for the proposed facility to be sited, is neglect." *Id.* at 27. With respect to HIE on shipments and at the proposed CISF, he concludes, "the details are completely lacking in the proposal. Obscuring the risks of transport and operation concerns like sabotage by attempting to use generic analysis and presenting a Pollyannaish version of reality to gain a contract is not effective business; it is rent seeking behavior of the most dangerous type." *Id.*

2. Expert Opinions and Conclusions of Dr. Gordon Thompson

Dr. Thompson, as Executive Director of the Institute for Resource and Security Studies, offers a similarly troubled assessment of the WCS application. After studying the assumptions and literature underlying the Continued Storage GEIS, he determined that the NRC Staff conducted a limited, perhaps confused, study of terrorist threats and consequent radiological threats at Diablo Canyon which led to the conclusion that "Type IV" radiation releases would have comparatively small environmental impacts. Thompson 2018 Report at 11. Dr. Thompson hypothesizes that a terrorist or sabotage attack causing a Type IV release could include a cask fire involving two canisters of SNF that would cause a substantial release of radiation, with a

magnitude between “the Fukushima release (36 PBq) and the Chernobyl release (85 PBq).” *Id.* at 11-12.

Dr. Thompson reported that the Continued Storage GEIS acknowledges that SNF assemblies could be removed from an ISFSI for purposes of extracting plutonium for nuclear weapons use. *Id.* He warns that:

In the absence of institutional controls, SNF containers, and the concrete overpacks or structures that surround these containers during storage, would be comparatively minor obstacles to well-equipped groups seeking to remove SNF assemblies, and/or components of SNF assemblies, from an ISFSI.

Id. at 13. As previously cited in this Petition, Dr. Thompson is concerned that the loss of institutional controls could happen at the end of the first century of CISF operations. *See* p. 113 *supra*. Dr. Thompson predicts that neglect or loss of institutional control of an ISFSI would mean an increased likelihood of theft and terrorism over time. Thompson 2018 Report at 21. He points out that an attack resulting in a cask fire could cause “radioactive contamination of the surrounding environment at levels comparable to contamination levels in the vicinities of the Chernobyl reactor after its 1986 accident and the Fukushima reactors after their 2011 accident, thereby creating various adverse impacts on humans and their environment. . . .” He warns that theft of radiological components from the CISF could have global implications because of the nuclear arms and dirty bombs into which they might be converted. *Id.* at 22. He advises that some ways of reducing the risks of disaster would be the use of much thicker-walled storage canisters, and storage at the CISF in “robust” structures (*i.e.*, HOSS). *Id.* at 22-23.

C. Risk Analysis and Management Under NEPA

WCS’s omissions to analyze and discuss HIE, terrorism and sabotage in its application documents must be addressed and remedied as a matter of law.

By 10 C.F.R. § 72.108, “The proposed ISFSI . . . must be evaluated with respect to the potential impact on the environment of the transportation of spent fuel, high-level radioactive waste, or reactor-related GTCC waste within the region.” NRC regulations mandate investigation of environmental effects of the act of transporting the SNF-filled canisters, whether they are being delivered to the WCS CISF or returned to the point of origin or being delivered to a repository.

Further, “Structures, systems, and components important to safety must be designed to accommodate the effects of, and to be compatible with, site characteristics and environmental conditions associated with normal operation, maintenance, and testing of the ISFSI or MRS and to withstand postulated accidents.” 10 C.F.R. 72.122(b). The Commission will issue a license under 10 C.F.R. Part 72 upon determining “that the application for a license meets the standards and requirements of the Act and the regulations of the Commission, and upon finding that “[t]he applicant's proposed operating procedures to protect health and to minimize danger to life or property are adequate.” 10 C.F.R. § 72.40(a)(5). The Commission further must find that “[t]here is reasonable assurance that . . . [t]he activities authorized by the license can be conducted without endangering the health and safety of the public.” 10 C.F.R. § 72.40(a)(13).

Further, 10 C.F.R. § 72.90 requires that the SAR must investigate and assess site characteristics that relate to safety and environmental impact. And 10 C.F.R. § 72.98 directs that:

(b) The potential regional impact due to the construction, operation or decommissioning of the ISFSI or MRS must be identified. The extent of regional impacts must be determined on the basis of potential measurable effects on the population or the environment from ISFSI or MRS activities.

(c) Those regions identified pursuant to paragraphs (a) and (b) of this section must be investigated as appropriate with respect to . . . (3) Any special characteristics that may influence the potential consequences of a release of radioactive material during the operational lifetime of the ISFSI or MRS.

There is controversy over NEPA's applicability to terrorism and security measures. When intervenors in an NRC licensing case sought to have terrorism and security measures investigated and analyzed under NEPA, the Ninth Circuit reversed the NRC, holding that the possibility of terrorist attack is not so "remote and highly speculative" as to be beyond NEPA's requirements. *San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1032 (9th Cir. 2006). The Ninth Circuit further noted that "[t]he numeric probability of a specific attack is not required in order to assess likely modes of attack, weapons, and vulnerabilities of a facility, and the possible impact of each of these on the physical environment, including the assessment of various release scenarios. . . . It is therefore possible to conduct a low probability/high consequence analysis without quantifying the precise probability of risk. The NRC itself has recognized that consideration of uncertain risks may take a form other than quantitative 'probabilistic' assessment." See "Proposed Policy Statement on Severe Accidents and Related Views on Nuclear Reactor Regulation," 48 Fed. Reg. 16,014, 16,020 (1983) (In addressing potential accident initiators (including earthquakes, sabotage, and multiple human errors) where empirical data are limited and residual uncertainty is large, the use of conceptual modeling and scenario assumptions in Safety Analysis Reports will be helpful when based on the best qualified judgments of experts, either in the form of subjective numerical probability estimates or qualitative assessments of initiating events and causal linkages in accident sequences.).

No provision of NEPA, or any other authority cited by the Commission, allows the NRC to eliminate a possible environmental consequence from analysis by labeling the risk as "unquantifiable." See *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 754 (3rd Cir. 1989) (J. Scirica, dissenting) (finding no "statutory provision, no NRC regulation or policy statement,

and no case law that permits the NRC to ignore any risk found to be unquantifiable”). An agency conducting a NEPA process must examine both the probability of a given harm occurring and the consequences of that harm if it does occur. “Only if the harm in question is so “remote and speculative” as to reduce the effective probability of its occurrence to zero may the agency dispense with the consequences portion of the analysis.” *State of New York v. Nuclear Regulatory Com'n*, 681 F.3d 471, 482 (D.C.Cir. 2012).

The upshot is, if the risk of a terrorist attack is not insignificant, then NEPA obligates the NRC to take a “hard look” at the environmental consequences of that risk. Precise quantification is therefore beside the point. “[P]recise quantification of a risk is not necessary to trigger NEPA's requirements.” *San Luis Obispo* at 1032.

Current NEPA regulations require an agency to deal with uncertainties by including within the EIS “a summary of existing credible scientific evidence which is relevant to evaluating the reasonable foreseeable significant adverse impacts on the human environment, and . . . the agency’s evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.” 40 C.F.R. § 1502.22(b)(3), (4). This requirement applies to those events with potentially catastrophic consequences “even if their probability of occurrence is low, provided that the analysis of impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.” 40 C.F.R. § 1502.22(b)(4). *San Luis Obispo* at 1033. But the regulation has not been followed with respect to terrorism and sabotage threats to the transportation or storage components of the WCS licensing request.

Here, the Joint Petitioners seek an analysis of the range of environmental impacts likely

to result in the event of a terrorist attack on both the WCS CISF and upon in-transit deliveries of SNF and GTCC waste. NEPA establishes a “national policy [to] encourage productive and enjoyable harmony between man and his environment,” and was intended to reduce or eliminate environmental damage and to promote “the understanding of the ecological systems and natural resources important to” the United States. *Dept. of Transp. v. Pub. Citizen*, 541 U.S. 752, 756, 124 S.Ct. 2204, 159 L.Ed.2d 60 (2004) (quoting 42 U.S.C. § 4321). The Supreme Court has identified NEPA's “twin aims” as “plac[ing] upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action[, and] ensur[ing] that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process.” *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983). Those aims are so far not fulfilled by ISP/WCS’s treatment of transportation and security risks at origination and destination points, as well as shipments of SNF and GTCC waste during the transit periods. Accordingly, Petitioners’ presentations through Dr. Ballard and Dr. Thompson validly articulate both inadequate coverage, and occasionally rank omissions of factual and analytical responsibility by WCS in the Environmental Report.

D. Specific Additional Areas of Analysis Under NEPA

NEPA mandates that an agency consider the environmental impacts of the proposed action and inform the public that it has taken those impacts into account in making its decision. That is, an agency must take a “hard look” at the environmental consequences of a proposed action before taking that action. *Nuclear Fuel Servs., Inc.*, LBP-05-8, 61 NRC 202, 207 (2005) (citing *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 558

(1978) and quoting *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983)).

The “hard look” requires the federal agency to make a “good faith” effort to predict reasonably foreseeable environmental impacts, and for the agency to apply a “rule of reason” after taking that “hard look” at potential environmental impacts. *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 & 2), LBP-78-26, 8 NRC 102, 141 (1978).

Based upon the mandates and expectations expressed in NEPA, its implementing regulations, and the NRC’s regulations implementing NEPA, Joint Petitioners urge that the “hard look” requires that the following matters be addressed in the Environmental Impact Statement:

1. ISP/WCS should conduct a programmatic EIS of the transportation element of its proposal. It must include core data such as the exact number of anticipated shipments and volumes; expected numbers of start clean/stay clean shipments (return-to-sender) and the number of shipments from the CISF to a permanent repository based on the operational lifespan of the CISF.

2. NRC Staff and WCS should define DBE’s and DBT’s for the whole duration of the transportation campaign to assist communities along the many potential routes understand what they may realistically be expected to face over the lifespan of the program. Additionally, as part of this process, NRC should publicly define a range of scenarios for both HIE and natural hazards, including release fractions that reasonably approximate the full range of consequences, *viz.*, no release, moderate releases and catastrophic releases. Also, there needs to be establishment of the threats to the thousands of shipments over time and inquiry into whether NRC regulations could be changed to help mitigate those risks.

3. NRC Staff and WCS should define with precision which nuclear power plants, DOE

facilities and other origination sites will ship to the proposed facility and how (*e.g.*, heavy haul truck for some of the journey; rail for the whole journey; barge for part of the journey and then rail, *etc.*). Such an inventory of origination sites and transportation modalities will help communities to better understand the shipment numbers going through their communities by rail, truck and barge. There is an additional question of whether Legal Weight Truck-sized casks will be shipped to WCS's CISF, in addition to the much larger rail-sized casks (by barge, heavy haul truck, and rail) mentioned above.

4. NRC Staff and WCS should define exactly which routes the shipments will take to the CISF if it is licensed and when it becomes operational. As part of this analysis, and considering the timespan of the shipment campaign, alternative routes and transport methodologies (contingencies) must be articulated.

5. NRC policies that address operational details such as use of dedicated trains and specific security procedures for waste shipments should be created, to provide coordination with the U.S. Department of Transportation (*see* Contention 5 *supra*) as well as guidance to communities along the routes in understanding their share of risk in the campaign to stock the CISF with inventory.

6. NRC Staff and WCS must define the wastes to be shipped to this facility – exact details on burnup history; years out of reactor for each shipment or part thereof; procedures regarding oldest fuel being shipped first; and percentages of cargoes/shipments for SNF/GTCC. These should reflect other lessons learned from the proposed Yucca Mountain Project over the course of decades of research, including a significant amount by Dr. Ballard himself as a primary, internationally recognized expert on this subject.

7. Given the variety of “inventory” that the CISF may accommodate, NRC Staff and WCS should specifically define fuel types and how far each will travel for each inventory level at a level of detail that would allow the construction of accident rates and consequence analyses for each transport mode and relative to each waste type.

8. The NRC Staff and WCS should define shipments and radiological cargo (specify the anticipated inventory of radionuclides), which would assist emergency responders to know what they face when asked to respond to a radiological incident and how best to mitigate the risk in the event of an incident.

9. Given the need to train, provide equipment and provide the necessary protocols to first responders, the NRC Staff and WCS should be specific as to the *longitudinal* funding (life expectancy for the interim facility) for such efforts for those communities along the transportation corridor and at the end point CISF. Additionally, the exact training procedures for initial shipments, return-to-sender shipments and shipments to a permanent repository must be developed well in advance. DOE does administer “Section 180c” funding for this purpose, but if DOE is excluded from a role on the CISF as suggested in the Blue Ribbon Commission on America’s Nuclear Future and National Academies of Science reports, the funding stream for emergency response equipment, training and other related expenses must be identified.

10. NRC Staff and WCS must define the routine radiation exposures the public will face per shipment and over the lifespan of the operational life of the CISF, including but not limited to workers involved in the shipment process, workers aligned to shipments/operations, the public who live within 800 meters of each side of any transportation route; and low-income people and people of color as well as populations of elderly, children/in-utero children/expectant mothers

within that 800 meter zone on each side of the routes.

11. NRC Staff and WCS must define the more-than-routine radiation exposures the public will face from contaminated or leaking shipments and over the lifespan of the operational life of the CISF. These contaminated or leaking shipments will increase exposures and the regulations for such are different than routine exposures. Impacted populations must include workers involved in the shipment process, workers aligned to shipments/operations, the public who live within 50 miles of any transportation route; and vulnerable populations of elderly, children/in-utero children/expectant mothers and EJ communities within that 50 mile zone.

12. NRC Staff and WCS must provide details on secure in place locations for shipments in the event of a radiological incident involving rail, truck or barge, or other unanticipated challenge, such as extreme weather events during the course of a shipment.

13. NRC Staff and WCS must define the exact organizational structure responsible for the shipment campaign and storage facility. If as the Blue Ribbon Commission advises, the DOE is not to be involved, who and what will replace this entity?

14. NRC Staff and WCS must define the title to and hence, liability for the wastes and the implications of that determination in light of the possibility that business affiliates of ISP might become owners of nuclear reactor sites and/or serve as contractors for CISF services.

15. The NRC Staff and WCS must define the role reprocessing may play at this or a nearby geolocation. Reprocessing is currently not allowed but if that was to change and WCS were to engage in that activity, the whole question of retrieval, shipment, storage and reprocessing of wastes should be pre-decided.

16. NRC Staff and WCS must define the consequences for a range of human induced and

design basis events and have in place plans if there are radiological incidents. At a minimum, this would include assessment protocols for radiological, social, economic, political and legal impacts.

17. NRC needs to specify the exact procedures and identify the financing mechanism(s) that communities will have to use to recover damages associated with any design basis or human induced events, and to receive compensation for mishaps with CISF transportation and operation.

18. The NRC should specifically adopt the Blue Ribbon Commission (BRC) and National Academy of Sciences (NAS) report recommendations on consent-based siting, waste transport and storage. The BRC in 2012 reported to regulators, agencies and the public that *any* future repository for SNF and HLW should be sited based on the consent of the affected state, tribal, and local communities. In 2013, DOE adopted this recommendation for “consent-based siting” and in January 2017, DOE published a “Draft Consent-Based Siting Process for Consolidated Storage and Disposal Facilities for Spent Fuel and High-Level Radioactive Waste.” The policy for consent-based siting has not been incorporated into any current legislation or rule, but, rather, remains merely a non-binding recommendation of the BRC and DOE. Yet transportation of nuclear waste poses risks to any community in a shipping corridor. SNF and GTCC waste transportation subjects local populations to routine radiation exposures, the risk of radioactivity releases due to accidents or attacks, and in the case of return-to-sender shipments, extraordinary and unknown radiation exposures and risks.

19. All ambiguity about the origins of wastes to be delivered to WCS throughout its operational history must be resolved in favor of disclosure. If military wastes will be stored at WCS, that must be disclosed and analyzed within the EIS. The operating assumption must be

that the totality of materials that would have been transported and stored at Yucca Mountain is likely to be stored at the CISF.

20. Specific accident scenarios relative to the CISF proposal are beyond design basis events and could be exacerbated by human interference. An exemplar event was the Baltimore Tunnel Fire (July 2001). This tunnel fire was analyzed by a Nevada contractor. A Holtec shipping container was the hypothetical shipping container involved in the fire, resulting in cask breach, large-scale releases of hazardous radioactivity, and a large number of injurious exposures, and even latent cancer fatalities. See: <http://www.state.nv.us/nucwaste/news2001/nn11459.pdf>. The NRC Staff and WCS should demonstrate situational awareness of these events and demonstrate specific plans to mitigate said risks.

22. The massive transportation program implicated by WCS's proposal must be addressed in the NEPA document.

23. Details on the complexity of the potential different waste streams (from power plants, decommissioning, defense operations, commercial operations and research reactors), from the many potential origination sites, and for all forms of potential wastes (SNF, HLW,GTCC/liquid/solid assemblies, *etc.*) is important to specify. That level of differential analysis is not found within the WCS CISF proposal and NRC should undertake this categorization prior to the EIS process so as to allow the bidders for interim storage facilities to plan for the full range of wastes that could be stored at the proposed CISF. Likewise, this analysis should be part of the NRC EIS process so that stakeholders can fully comprehend the scope of activities necessary to stock the proposed facility, and the full spectrum of associated risks.

24. Identification of affected communities is difficult since transportation planning

for the proposed CISF was not done. NRC Staff and WCS should identify the primary and secondary transport/storage communities prior to any proposal so that mitigation of adverse effects could be planned for and implemented from the onset of transportation to and from a storage facility.

25. NRC Staff and WCS should recognize that disasters, human initiated or natural, do not easily fit economic impact analysis (EIA) protocols. Due to social obligations and the lack of good data, a reasonable cost-benefit analysis (CBA) is likewise not easy to accomplish. The planners for any effort at the transportation of nuclear waste need to move beyond EIA and CBA to invent new economic models to assess the impacts of a radiological disaster. Perhaps they could build off of existing platforms like Transportation Economic Development Impact System (TREDIS) and the various agencies' specific assessment tools for impacts from transportation development.

Contention 15: Adoption of Sierra Club Contentions By Joint Petitioners

Pursuant to 10 C.F.R. § 2.309(f)(3), Joint Petitioners move to adopt all contentions filed by the Sierra Club in this proceeding and to re-allege them as their own as if written herein.

Basis for the Contention

Joint Petitioners and the Sierra Club share many of the same issues and concerns regarding the proposed ISP/WCS CISF at issue in this proceeding. It would serve the interests of judicial economy and merits litigation of the issues raised in this proceeding for the parties to adopt each others' contentions. Petitioners agree that the Sierra Club shall act as the primary representative with respect to Sierra Club contentions, and they reserve the matter of requesting co-sponsorship or joint designation for a later time. Joint Petitioners further give notice of their

intentions of offering evidence and argument in support of the Sierra Club's contentions.

In a license transfer proceeding involving Indian Point, two intervenors, the Town of Cortland and Citizens Awareness Network sought to adopt each other's contentions. *See Consol. Edison Co.* (Indian Point, Units 1 and 2), CLI-01-19, 54 NRC 109, 131-33 (2001). The Commission held that where both petitioners have independently met the requirements to participate in the proceeding, the Board may provisionally allow petitioners to adopt each other's issues early in the proceeding. *Id.* at 132. That is the nature of Joint Petitioners' request, should they be granted standing in this matter, and they so move.

/s/ Terry J. Lodge

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Leona Morgan, Individually, Petitioners

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I hereby certify that on November 13, 2018, copies of the foregoing "Petition of Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, Sustainable Energy and Economic Development (SEED) Coalition and Leona Morgan, Individually and Request for Adjudicatory Hearing" and accompanying declarations and attachments were deposited in the Electronic Information Exchange (the NRC's E-Filing System) in this proceeding, for automated distribution to all registered counsel and parties.

/s/ Terry J. Lodge

Terry J. Lodge, Esq.
Counsel for Joint Petitioners

