Exhibit 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY LICENSING BOARD

IN THE MATTER OF INTERIM STORAGE PARTNERS LLC (Consolidated Interim Storage Facility)	Docket No. 72-1050 July 6, 2020

FACTS PETITIONERS INTEND TO RELY ON TO SUPPORT NEW AND AMENDED CONTENTIONS

Interim Storage Partners LLC ("ISP") Environmental Report Rev. 3[1]

- "The DOE or the SNF Title Holder(s) are is also responsible for the transportation of SNF from the shutdown and decommissioned reactors across the country. Studies have been performed by the DOE to determine the level of work that would be needed to improve the infrastructure that would be required to remove SNF currently in storage at 12 shutdown and decommissioned reactors for transport to an ISFSI or a geologic repository."[2]
- "The environmental impacts to the affected areas would be attributable to radiation doses received by members of the public along the transportation routes. Over the next several years, the DOE is expected to commission new transportation systems needed to transport SNF from existing commercial reactor sites, including the shutdown reactor sites, to a CISF or geologic repository. Other environmental impacts would be attributable to upgrades that would be required to the railroad lines leading from the former reactor sites to a CISF or geologic repository. The connected environmental impacts potentially associated with the transportation of SNF and upgrades required to support the removal of SNF from the shutdown and decommissioned reactor sites are discussed in Section 4.2."[3]
- "A non-local cumulative impact is the cumulative dose to the public associated with transporting radioactive materials in commerce. Both the NRC and the TCEQ evaluated the environmental impacts attributable to transportation at the NEF and Waste Control Specialists LLRW Disposal Facility, respectively . The number of annual shipments transported by highway in the analysis by NEF

[1] WCS Consolidated Interim Storage Facility Environmental Report, Docket No. 72-1050, Rev. 3, (Feb. 17, 2020) (ADAMS Accession No. ML20052E152), hereinafter "ISP Environmental Report."
[2] ISP Environmental Report at 3-8.
[3] ISP Environmental Report at 3-9.

was estimated at 1,500. Approximately 1,026 shipments by highway and 96 shipments by rail were received in 2015 to support operations at Waste Control Specialists. In comparison, ISP anticipates that no more than 200 shipments of SNF would be received annually at the CISF."[4]

- "Impacts from construction transportation would include the generation of fugitive dust, changes in scenic quality, and added noise. Dust would be generated to some degree during the various stages of construction activity. The amount of dust emissions would vary according to the types of activity. The first 12 months of construction would likely be the period of highest emissions since approximately 63 ha (155 acres) would be involved, along with the greatest number of construction vehicles operating on an unprepared surface. However, it is expected that no more than 20 ha (50 acres) would be involved in this type of work at any one time."[5]
- "Based on the average daily traffic on nearby roadways, the temporary increase in vehicle flow associated with onsite operations would occur for periods of short duration during shift changes with little effect on anticipated transportation impacts to the surrounding area. Integrated transportation impacts are small."[6]
- If the DOE is the shipper, the federal government, through DOE, is responsible for providing emergency training to states, tribes, and local emergency responders along the transportation routes where SNF would be transported to the CISF. ISP joint venture member Waste Control Specialists has acquired considerable experience in responding to the potential transportation events given its relative proximity to the Waste Isolation Pilot Plant. Local fire fighters, law enforcement, and emergency medical staff have been trained to respond to put out fires and organizing any emergency response actions that may be needed to reduce the severity of events related to transportation incidents involving SNF.[7]
- SNF would be transported exclusively by rail. All SNF would be transported approximately 169 km (105 mi) from Monahans, Texas to the CISF along the transportation corridor. 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. The preparation of such shipments will be conducted in accordance with written procedures prepared by the commercial nuclear power plant, the DOE, or their contractors. The DOE or private qualified logistics company will also be responsible for coordinating with federal agencies, such as the U.S. Department of Transportation, U.S. Department of Homeland Security, U.S. Environmental Protection Agency, and the Federal Emergency Management Agency, regarding transportation of SNF from the commercial nuclear reactor sites to the CISF.[8]

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[4] ISP Environmental Report at 2-67.
[5] ISP Environmental Report at 4-4.
[6] ISP Environmental Report at 4-7.
[7] ISP Environmental Report at 4-8.
[8] ISP Environmental Report at 4-8.

- Non-radiological environmental impacts connected to upgrades associated with the fabrication of new rail transport carriers and enhancements to rail infrastructure needed to remove SNF from the decommissioned reactors and transport to an ISFSI or geologic repository are discussed in a DOE report titled, A Project Concept for Nuclear Fuels Storage and Transportation. ISP anticipates initially receiving up to approximately 5,000 MTUs of SNF and related GTCC waste from decommissioned reactor sites at 12 locations across the U.S. As discussed in Section 3.2, heavy-haul trucks may be needed to move SNF over short distances from a decommissioned reactor site to a rail transfer facility. The NRC previously analyzed the environmental impacts associated with using heavy haul trucks to transport SNF from a rail transfer facility to an interim storage facility in NUREG-1714. The distances analyzed in the NUREG-1714 report transporting are much greater than the distances between the shutdown decommissioned reactor sites and the rail transfer facilities. Thus, the environmental impacts analyzed in NUREG-1714 are bounding. The radiological impacts potentially affecting members of the public along the three transportation routes have been analyzed and are described below. The radiological environmental impacts attributable to the transport of SNF from the decommissioned reactor sites are insignificant. [9]
- "The radiological impacts potentially affecting members of the public along the three transportation routes have been analyzed and are described below. The radiological environmental impacts attributable to the transport of SNF from the decommissioned reactor sites are insignificant."[10]
- "During construction, fugitive dust emissions are expected and are authorized under a "Permit By Rule" by the TCEQ. Transportation impacts to air quality include emissions from employee automobiles and the diesel locomotive used to transport SNF along the transportation corridor to the Cask Handling Facility at the CISF. Air quality would also be impacted from emissions of carbon monoxide, carbon dioxide and particulates from the combustion of diesel and other fuels used to construct, assemble and transport the spent fuel storage. The environmental impacts to air quality would not be significant. Additional information regarding the environmental impacts to air quality is provided in Sections 3.6 and 4.6."[11]
- "ISP would obtain any needed storm water permit addressing potential runoff of sediments and required BMPs during construction of the rail side track. No significant environmental impacts to water quality are expected to be attributable to the transportation of SNF, to the CISF, including during construction of the rail sidetrack. Additional information regarding impacts to water quality during transportation is provided in Sections 3.4 and 4.4."[12]
- "The CISF would be designed and constructed in manner that would minimize the quantity of radioactive wastes and contaminated equipment, and facilitate the removal of radioactive wastes and contaminated materials at the time the

[9] ISP Environmental Report at 4-9.
[10] ISP Environmental Report at 4-9.
[11] ISP Environmental Report at 4-10.
[12] ISP Environmental Report at 4-10.

CISF is permanently decommissioned pursuant to 10 CFR 72.130, Criteria for decommissioning. At the time of license termination, the site would be released for unrestricted use in accordance with 10 CFR 20, Subpart E. Radioactive materials generated would be transported and disposed of at Waste Control Specialists LLRW Disposal Facilities. As such, the transportation impacts at the time of decommissioning would be small."[13]

- "The evaluation determined that the radiological impacts for both incident-free transportation and accidents for shipments to and from the CISF were small and well below background doses. It further showed that barge and heavy haul shipments were not major contributors to overall collective dose."[14]
- The assumptions related to the number of casks per shipment, number of casks shipped per year, total number of casks and shipments over the time used to determine the radiological impacts of transporting SNF in this evaluation are different that those used to calculate the Cost Benefits documented in Chapter 7. The assumptions used in herein are appropriate because they are bounding and conservative for determining bounding dose estimates at 4-13.
- "In licensing the PFS SNF Storage facility, the NRC analyzed the radiological impacts associated with transporting 40,000 MTUs of SNF from Maine Yankee to Goshute Indian Reservation near Salt Lake City, Utah. The radiological impacts attributable to transportation were not significant and served as a basis for issuance of the Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation for the Skull Valley Band of the Goshute Indians and the Related Transportation Facility in Tooele County, Utah."[15]
- "The radiological transportation impacts that could potentially occur during off-normal events were analyzed. Type B transportation casks licensed in accordance with 10 CFR Part 71 are constructed to withstand severe accidents so that most transport accidents would not result in damage to the cask body or seals that would result in a release. The evaluation looked at three types of potential accidents involving the transportation of SNF by rail, accidents involving no release, accidents involving a release and accidents resulting in a loss of shielding. The dose risk was found to be small for all three types of accidents, and is described in more detail in Attachment 4.1. The conclusion that the accident dose risk is small is consistent with previous studies conducted by the NRC."[16]
- "The data on minority and low-income populations in the 6.4 km (4 mi) radius study area does not indicate the presence of an environmental justice community of concern. No relocations or displacements would be required for the proposed CISF activities. Any noise or air quality considerations would be primarily limited to temporary impacts during the construction phase. Deliveries of storage casks would happen only a few times a week and transportation would be on rail cars, resulting in limited noise or air quality

[13] ISP Environmental Report at 4-10.
[14] ISP Environmental Report at 4-11.
[15] ISP Environmental Report at 4-14.
[16] ISP Environmental Report at 4-22.

impacts. Economic impacts from construction and operations would result in small positive effects on the local and regional economy."[17]

- "There are no anticipated integrated impacts to the rail since it will be used for transportation of canisters during operation but will not be used for construction of pads. There would be small integrated impacts to the local transportation system when construction and operation are concurrent due to the movement of operation workers commuting each day to the proposed CISF and due to the movement of construction workers commuting to the proposed CISF. It is anticipated the integrated impacts would be small since the construction will be on and off over the course of 20 years. The operations workforce is expected to have 30 workers distributed among 3 shifts per day using individual or light trucks. These workers could account for an increase of 60 vehicle trips per day on Texas Highway 176/ New Mexico Highway 234. The construction work force would be a maximum of 50 construction workers using individual vehicles, work trucks or cement trucks. These workers would account for an increase of 100 vehicle trips per day local roads for approximately 60% of one year or 7.2 months out of 12 months."[18]
- "For an "away-from-reactor" storage facility such as the CISF, the NRC concluded in its GEIS that the unavoidable adverse environmental impacts for each resource area were small except for air quality, terrestrial ecology, aesthetics, waste management, and transportation; the impacts to these resources could range from small to moderate. Socioeconomic impacts would range from small to beneficial and large. Historic and cultural impacts could be small, moderate, or large, depending on a variety of local conditions. The potential moderate impacts to air quality, terrestrial wildlife, and transportation were based on construction-related potential fugitive dust emissions, terrestrial wildlife direct and indirect mortalities, and temporary construction traffic impacts. The potential moderate impacts to aesthetics and waste management were based on noticeable changes to the viewshed from constructing a new ISFSI. The volume of nonhazardous solid waste generated by assumed ISFSI and dry transfer system replacement activities would be minimal. Potential large positive impacts to socioeconomics would be due to local economic tax revenue increases from the CISF. The GEIS' potential large impacts to historic and cultural and special status species apply to assumed site-specific circumstances at an away-from-reactor ISFSI involving the presence of these resources during construction activities and the absence of effective protection measures. Specifically, these potential historic and cultural impacts vary depending on whether resources are present, the extent of proposed land disturbance, and whether the licensee has management plans and procedures in place that are protective of historic and cultural resources. For the WCS CISF, the land disturbance area is relatively small and the impact on threatened or endangered species is very small. ISP joint venture member Waste Control Specialists has implemented management plans to be protective of the

[17] ISP Environmental Report at 4-77.
[18] ISP Environmental Report at 4-87.

ecology."[19]

- "For an away-from-reactor ISFSI, the NRC concluded in its GEIS that there would be no irreversible and irretrievable commitments of resources during continued storage for most resources. However, impacts on land use, aesthetics, historic and cultural resources, waste management, and transportation would result in irreversible and irretrievable commitments. As finite resources, the loss of historic and cultural resources would constitute irreversible and irretrievable impacts. For the indefinite storage timeframe, land and visual resources allocated for SNF storage would be committed in perpetuity as continued operations would preempt other productive land uses and permanently affect the viewshed. Waste-management activities involving waste treatment, storage, and disposal would result in the irreversible commitment of capacity for waste disposal. Transportation activities would involve the irreversible and irretrievable commitment of resources, including vehicle fuel for commuting workers and shipping activities."[20]
- Attachment 1-1 Letters[21]
- Attachment 1-2 TCEQ's Assessment of HLRW Storage Options (2014)[22]
- Attachment 2-2 Site Scoring Analysis[23]
- Attachment 4-1 Explanation of Transportation Analysis[24]
- Appendix A – Socioeconomic Impact Analysis (November 2019)[25]

ISP Draft Environmental Impact Statement ("DEIS")[26]

- During operation of any project phase, SNF would be shipped from existing storage sites at nuclear power plants or ISFSIs to the proposed CISF. These shipments must comply with applicable NRC and U.S. Department of Transportation (DOT) regulations for the transportation 25 of radioactive materials in 10 CFR Parts 71 and 73 and 49 CFR Parts 107, 171–180, and 390–397, as appropriate to the mode of transport. The NRC staff evaluated the radiological and nonradiological health impacts to workers and the public from this project-specific transportation, considering both incident-free and accident conditions"[27]
- Because no arrangements regarding which nuclear power plants would store SNF at the proposed CISF have been made yet, the exact locations of SNF shipment origins have not been determined; therefore, the details regarding the

[19] ISP Environmental Report at 8-4.
[20] ISP Environmental Report at 8-5.
[21] ISP Environmental Report starting at A1-1-1.
[22] ISP Environmental Report starting at A1-2-1.
[23] ISP Environmental Report starting at A2-2-1.
[24] ISP Environmental Report starting at A4-1-1.
[25] ISP Environmental Report starting at A-A-1.
[26] Environmental Impact Statement for Interim Storage Partners LLC's License Application for a Consolidated Interim Storage Facility for Spent Nuclear Fuel in Andrews County, Texas, Draft Report for Comment, NUREG-2239 (May 2020) (ADAMS Accession No. ML20122A220), herein after "ISP DEIS."
[27] ISP DEIS at xxiii.

specific routes that would be used also are not known at this time.[28]

- Additionally, the SNF stored at the proposed CISF project would eventually need to be transported to a permanent geologic repository, in accordance with the U.S. national policy for SNF management established in the Nuclear Waste Policy Act of 1982, as amended (NWPA). The NWPA requires that DOE submit an application for a repository at Yucca Mountain, Nevada. Unless and until Congress amends the statutory requirement, the NRC assumes that the transportation of SNF from the CISF to a permanent repository will be to a repository at Yucca Mountain, Nevada.[29]
- The exact routes for SNF transportation to and from the proposed CISF would be determined in the future prior to making the shipments. However, to evaluate the potential impacts of these shipments and to aid the evaluation of the ISP transportation analyses, the NRC staff considers that representative or bounding routes applicable to a national SNF shipping campaign such as those described and evaluated in Section 2.1.7.2 of DOE's Final Supplemental Environmental Impact Statement for a geologic repository at Yucca Mountain (DOE, 2008) and NRC's most recent SNF transportation risk assessment in NUREG–2125 (NRC, 2014), provide sufficient 15 information about potential transportation routes to support the analysis of impacts in EIS 16 Section 4.3. The NRC staff considers the routes evaluated in these prior transportation 17 analyses to be representative or bounding for SNF shipments to and from the proposed CISF 18 project because they were derived based on typical transportation industry route selection 19 practices, they considered existing power plant locations, and can be applied to EIS analyses 20 using conservative or bounding assumptions (e.g., as described further in Section 4.3 of this 21 EIS, selecting a route that is longer than most of the routes that would actually be used).[30]
- DOE. "Final Supplemental Environmental Impact Statement for a Geologic Repository for the 2 Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, 3 Nye County, Nevada." DOE/EIS-0250F-S1. ADAMS Accession No. ML081750191. 4 Washington, DC: U.S. Department of Energy, Office of Civilian Radioactive Waste 5 Management. (2008)
- Sinkholes and karst fissures formed in gypsum bedrock are common features on the rim of the 42 Delaware Basin, a sub-basin of the Permian, which abuts the Central Basin Platform in west 43 Texas and southeastern New Mexico. New sinkholes form almost annually,. . .[31]
- The Wink sinkholes in Winkler 7 County, Texas, are approximately 72 km [45 mi] south-southwest of the proposed CISF project 8 area and probably formed by dissolution of salt beds in the upper Permian Salado Formation 9 that resulted from an improperly cased abandoned oil well (Johnson et al., 2003). The Jal 10 Sinkhole near Jal, New Mexico, is approximately 30 km [18 mi]

[28] ISP DEIS at 3-7.
[29] ISP DEIS at 3-8.
[30] ISP DEIS at 3-8.
[31] ISP DEIS at 3-19.

southwest of the proposed CISF 11 and also probably formed by dissolution of salt beds in the Salado Formation caused by an 12 improperly cased groundwater well (Powers, 2003). The Jim's Water Service Sinkhole, Loco 13 Hills Sinkhole, Denver City Sinkhole, and I&W Brine Well resulted from injection of freshwater 14 into underlying salt beds and pumping out the resulting brine for use as oil field drilling fluid 15 (Land, 2013). The Jim's Water Service, Loco Hills, and Denver City sinkholes are located in 16 relatively remote areas; however, the I&W Brine Well is located in a more densely populated 17 area within the City of Carlsbad, New Mexico. The wells and karst features described above all 18 occur outside of the land use study area. In the proposed CISF project area, there are no 19 subsurface salt mining operations.[32]

- Recent studies employing satellite imagery have identified movement of the ground surface across an approximately 10,360 km2 [4,000 mi2 21] area of west Texas that includes Winkler, 22 Ward, Reeves, and Pecos counties (Kim et al., 2016; SMU Research News, 2018). In one 23 area, as much as 102 cm [40 in] of subsidence was identified over the past 2.5 years. This area 24 is approximately 0.8 km [0.5 mi] east of the Wink No. 2 sinkhole in Winkler County, Texas, 25 where there are two subsidence bowls. The rapid sinking in this area is most likely caused by 26 water leaking through abandoned wells into the Salado Formation and dissolving salt layers 27 (SMU Research News, 2018)[33]
- "Potential transportation impacts include increases in traffic, potential changes to traffic safety, and increased degradation of roads. These impacts would result from transport of equipment, supplies, and produced construction wastes. Workers commuting to and from the facility would also increase traffic. These impacts were found to be minor for the proposed action and full build-out (Phases 1-8). Other impacts, including radiological and nonradiological health and safety impacts under normal and accident conditions, could result from the proposed use of national rail lines to transport shipments of SNF to and from the CISF. These rail shipments of SNF could include relatively short segments of barge or heavy haul truck transportation as needed to move SNF from reactor sites to the nearest rail line where onsite rail access is limited."[34]
- The largest 33 earthquake recorded in the vicinity of the proposed CISF was the Rattlesnake Canyon 34 earthquake recorded in 1992, which had a magnitude 5.0 M and an epicenter located 35 approximately 30 km [18 mi] southwest of the proposed project area.[35]
- "Radiological impacts from transportation to both workers and the public were estimated based on prior NRC transportation risk estimates in NUREG–2125, "Spent Fuel Transportation Risk Assessment," and scaled using a representative transportation route that is longer than the distance from most reactor sites to

[32] ISP DEIS at 3-20.
[33] ISP DEIS at 3-20.
[34] ISP DEIS at 13.
[35] ISP DEIS at 3-20.

the CISF. Because dose estimates increase with shipment distance, selecting a route with a larger distance than that actually expected is bounding (i.e., it overestimates potential dose). The radiological impact to workers from incident-free transportation of SNF to and from the CISF for the proposed action and for full build-out (Phases 1-8) were found to be below the NRC 10 CFR Part 20 standard dose limit of 0.05 Sv (5 rem) (see Section 4.3.1 of the draft EIS)."[36]

- "The potential radiological health impacts to the public from incident-free transportation of SNF to and from the CISF would occur from exposures to the normal radiation emitted (during transportation) from the loaded transportation casks. All of the estimated public health effects from the proposed incident-free SNF transportation for all phases are below the thresholds for health effects (Section 4.3.1.2.2.2 of the draft EIS) and, therefore, are most likely to be zero. Someone who stands about 30 meters [98 feet] from the tracks and watches all 3,400 shipments over 20 years would receive a dose of about 0.019 mSv, or 1.9 mrem, of direct radiation emitted from the heavily shielded transportation casks. For comparison, the NRC limits annual public doses from licensed facility operations to 1 mSv [100 mrem] (10 CFR Part 20) and the average annual background radiation exposure in the United States is 6.2 mSv [620 mrem], with approximately 3.1 mSv [310 mrem] from natural sources of radiation and 3.1 mSv [310 mrem] from man-made sources [medical, commercial, and industrial sources]."[37]
- "For most resource areas, the impacts are SMALL. Resource areas with a SMALL impact are land use, transportation, geology and soils, surface water, groundwater, air quality, noise, historic and cultural resources, visual and scenic resources, public and occupational health, and waste management. Ecology resources would experience a SMALL to MODERATE impact. There would be a SMALL to MODERATE (beneficial) impact to socioeconomics, due to new businesses and residents, and tax revenues. For environmental justice, no disproportionately high and adverse human health and environmental effects were found for minority and low income populations. Additional information about resource impacts may be found in Chapter 4 of the draft EIS."[38]
- ISP completed a site-specific probabilistic seismic hazard analysis (PSHA) of the proposed 4 CISF project area in 2016 to estimate the levels of ground motions that could be exceeded at a 5 specified annual frequency (or return period) at the site, incorporate the site-specific effects of 6 the near-surface geology on ground motions, and develop seismic design parameters for the 7 site (ISP, 2020).[39]
- As part of the analysis for the WCS site, the PSHA estimated a 2,500- 10 year return period peak horizontal acceleration on soft rock of only 0.04g (ISP, 2020).

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[36] *Id.*
[37] *Id.*
[38] ISP DEIS at 15.
[39] ISP DEIS at 3-21.

- The environmental impacts are based upon information provided in the applicant's 3 Environmental Report (ER) (ISP, 2020), Safety Analysis Report (SAR) (ISP, 2018), and 4 responses to NRC requests for additional information (RAIs) (ISP, 2019a) and supplemented by 5 the best available information and established science the NRC staff identified.[40]
- Outside of the fenced owner-controlled area (OCA) there would be 9 0.6 ha [1.5 acres] of land disturbance for the rail sidetrack along with 1.2 ha [3 ac] for 10 construction of the 1.6 kilometers (km) [1 mile (mi)] site access road, and 1.6 ha [4 ac] for a 11 construction laydown area south of the proposed CISF at 4-3.
- As discussed in EIS Section 3.2.4, the proposed project area is in a region of active oil and gas 9 exploration and development. Because the oil and gas wells outside the proposed CISF project 10 area are already constructed and operating and their owners would retain ownership or leasing 11 rights to extract oil and gas, project construction activities would not disturb those oil and 12 gas wells.[41]
- Defueling the CISF would involve removal of SNF from the proposed CISF and transport of the 15 fuel to a permanent geologic repository (EIS Section 2.2.1.3.2). Because ISP expects to use 16 similar equipment to remove the SNF canisters from the storage facility to that used for 17 emplacement, and no new construction is anticipated, defueling would have land use impacts 18 similar to the earlier activities of the operations stage. For example, the previously constructed 19 rail sidetrack would be utilized and maintained, but no additional land use impacts would be 20 anticipated. Therefore, the NRC staff concludes that the land use impacts from defueling for the 21 proposed action (Phase 1) and full build-out (Phases 1-8) of the proposed CISF during 22 operations would be SMALL.[42]
- Impacts such as increases in traffic, potential changes to 24 traffic safety, and increased degradation of roads would result from the proposed use of roads 25 for shipping equipment, supplies, and produced wastes, as well as from commuting workers 26 during the lifecycle of the proposed CISF. Other impacts, including radiological and 27 nonradiological health and safety impacts under normal and accident conditions, could result 28 from the proposed use of national rail lines to transport shipments of SNF to and from the 29 proposed CISF. These shipments could include relatively short segments of barge or 30 heavy-haul truck transportation as needed to move the SNF from generator sites (or ISFSIs) 31 (EIS Sections 2.2.1.2 and 2.2.1.3.2) to the nearest rail line when onsite rail access is limited.[43]
- During the construction stage of the proposed CISF, ISP would use trucks to transport 37 construction supplies and equipment (e.g., concrete and conventional earthmoving and grading 38 equipment) to the proposed project area. The regional and local transportation infrastructure 39 that would serve

[40] ISP DEIS at 4-2.
[41] ISP DEIS at 4-4.
[42] ISP DEIS at 4-5.
[43] ISP DEIS at 4-6.

the proposed CISF is described in EIS Section 3.3. Access to the proposed 40 CISF from nearby communities would be from State Route 18, which connects the cities of 41 Hobbs and Eunice, New Mexico, and Texas State Route 176, which travels past the proposed 42 project area between the cities of Eunice, New Mexico, and Andrews, Texas. ISP proposes no 43 new access road on Texas State Highway 176 to provide access to the proposed CISF. An 44 existing roadway on the WCS property would be extended north to the proposed CISF.[44]

- The impacts of using these other modes to supplement rail 15 transportation of SNF was previously evaluated by the U.S. Department of Energy (DOE) 16 (DOE, 2008, 2002) and found to not significantly change the minor radiological impacts from a 17 national mostly rail SNF transportation campaign and therefore are not evaluated further in this 18 EIS. This DOE analysis evaluated the differences in estimated impacts of using barge to 19 transport SNF from 17 of 24 reactor sites (that did not have direct rail access but were located 20 along waterways) to the nearest barge dock with rail access. The estimated incident-free 21 radiological and nonradiological impacts for national SNF transportation under the mostly rail 22 with barge transportation scenario were the same or less than the minor impacts DOE 23 estimated for the mostly rail scenario (for example, 1.7 latent cancer fatalities for involved 24 workers; 0.7 latent cancer fatalities for the public). DOE also found minor radiological and 25 nonradiological accident impacts that were the same or not notably different between the mostly 26 rail and mostly rail with barge transportation scenarios.[45]
- Some reactor sites, in particular, those that have been shut down or decommissioned but 28 continue to store SNF in dry storage casks, may require local transportation infrastructure 29 upgrades to remove the SNF from the site (DOE, 2014). These upgrades, for example, could 30 include installing or upgrading rail track, roads, or barge slips necessary to transfer SNF offsite. 31 Because these infrastructure upgrades would be needed – regardless of whether the proposed 32 CISF project is approved – to allow shipment of SNF from reactor sites to a repository in 33 accordance with the Nuclear Waste Policy Act of 1982 (NWPA), these enhancements are 34 beyond the scope of the proposed action and are therefore not evaluated further. Additionally, 35 because these infrastructure improvements are expected to be small construction projects 36 limited to preexisting, previously disturbed, and previously evaluated reactor sites that are 37 dispersed throughout the U.S., the environmental impacts are expected to be minor and are not 38 evaluated further for cumulative impacts in Chapter 5 of this EIS.[46]
- The representative route selected from NUREG–2125 for the NRC staff's CISF analysis was rail 5 transport from the Maine Yankee nuclear power plant to the town of Deaf Smith, Texas. The 6 reported distance for this shipment was 3,362 km [2,089 mi] (NRC, 2014a). This route was 7 selected as bounding because

[44] ISP DEIS at 4-6.
[45] ISP DEIS at 4-10.
[46] ISP DEIS at 4-10.

most of the potential origins (U.S. nuclear power plants) for 8 shipments destined for the proposed CISF are located east of the proposed CISF and the 9 distance of the selected representative route is longer than the actual distances that would be 10 traveled from most U.S. nuclear power plants to the proposed CISF. Furthermore, (for the 11 public dose calculations described in the following section) the transportation characteristics 12 along the route from Maine to Texas would be diverse and include several rural small towns as 13 well as suburban and urban areas that would have dose- and risk-related conditions that are 14 representative of conditions on railways that could be potentially used for the proposed project.[47]

- The highest accumulated exposures over time to this low level of radiation to members of the 12 public would occur to those individuals who spend the most time within close proximity to the rail 13 lines used for SNF transportation. This includes individuals who may live or work adjacent to 14 rail lines used for SNF transportation.[48]
- ISP 3 provided more detailed proprietary documentation of their transportation dose and risk 4 calculations that was the NRC staff reviewed. The NRC review found that the methods ISP 5 used to calculate the incident-free SNF transportation impacts to the public were acceptable, 6 as described previously for the ISP transportation worker dose calculations (EIS 7 Section 4.3.1.2.2.1). As part of this review, the NRC staff conducted independent confirmatory 8 calculations as an additional check of the technical adequacy of the calculations and results.[49]
- For a loss of shielding accident, ISP estimated a first responder at 5 m [5.5 yd] 40 from the cask would receive a dose rate of 8.1 mSv/hr [810 mrem/hr] from the damage to cask 41 shielding that a fire caused or 7.1 mSv/hr [710 mrem/hr] from the damage that impact force 42 caused. For an accident involving a release, ISP estimated a maximum individual occupational 43 dose to a first responder of 0.0771 Sv [7.71 rem] when spending a day at 33 meters from 44 the cask.[50]
- The potential impacts of the additional SNF shipments to the local rail traffic on the 24 Texas-New Mexico Railroad (TNMR) traveling north from the Union Pacific connection at 25 Monahans, Texas, to Lovington, New Mexico, would be minor because the 170 or fewer 26 proposed annual SNF shipments to the CISF would not be a large addition to the existing railcar 27 traffic of 22,500 railroad carloads per year (EIS Section 3.3) and the speed of all traffic would be 28 limited based on the class of the track, thereby limiting the potential for delays resulting from 29 differences in the speed of travel. On the broader national rail network, the potential traffic 30 impacts of the additional SNF shipments would be addressed by rail industry traffic flow 31 monitoring and

[47] ISP DEIS at 4-13.
[48] ISP DEIS at 4-15.
[49] ISP DEIS at 4-16.
[50] ISP DEIS at 4-17.

routing and therefore the NRC staff expects it to be minor.[51]

- The assumed route of SNF shipments would travel from the proposed CISF to the proposed 35 repository at Yucca Mountain, Nevada. The representative route selected from NUREG–2125 36 for the NRC staff's CISF defueling analysis travels by rail from the town of Deaf Smith, Texas, to 37 the Idaho National Engineering Laboratory. The reported distance for this shipment was 38 1,913 km [1,189 mi] (NRC, 2014a). This route was selected because the distance was 39 bounding and the NRC staff considered the varied conditions (e.g., population characteristics) to 40 be adequate to represent the routes that would be taken by actual SNF shipments from the 41 proposed CISF for the purpose of evaluating the potential radiological impacts of the proposed 42 SNF transportation. By comparison, ISP's calculations included a representative route from the 43 proposed CISF to the proposed Yucca Mountain repository that was based on modeling the rail 44 distance from Monahans, Texas, to Jean, Nevada, a distance of 1,935 km [1,202 mi]; therefore, 45 the NRC staff's representative route selection is comparable to the approximate distance 46 between the two project areas.[52]
- Significant additional costs to States would likely not be incurred related to unique or 47 different training to respond to potential transportation accidents involving SNF as compared to 48 existing radioactive materials commerce. However, the NRC staff recognizes that if SNF is shipped to a CISF, some States, Tribes, or municipalities along transportation routes may incur 2 costs for emergency-response training and equipment that might otherwise be eligible for 3 funding under NWPA Section 180(c) provisions if DOE shipped the SNF from existing sites to a 4 repository. Because needs of individual municipalities along transportation routes and the costs 5 of this training and equipment vary widely, quantification of such would be speculative. 6 Furthermore, how the States may distribute funding for first responder training and equipment to 7 local municipalities is not within NRC's authority and is beyond the scope of this EIS. [53]
- The proposed CISF consists of two SNF transportation campaigns while the No-Action 31 alternative consists of just one campaign. This affects more than just the estimated costs. As 32 described in EIS Section 4.3, the No-Action alternative results in a net reduction in overall 33 occupational and public exposures from the transportation of SNF, because the overall distance 34 traveled from reactor sites to a repository would likely be less than from reactor sites to the 35 proposed CISF and then to a repository. Similarly, as described in EIS Section 5.7.2.1, this 36 overall reduction in the distance SNF would likely travel means that the No-Action alternative 37 would generate fewer combustion air emissions than the proposed CISF.[54]
- The proposed CISF and No-Action alternative also share or have in common

[51] ISP DEIS at 4-20.
[52] ISP DEIS at 4-22.
[53] ISP DEIS at 4-74 to 4-75.
[54] ISP DEIS at 8-9.

other SNF 2 transportation cost factors. A key difference between the proposed CISF and the No-Action 3 alternative concerning these other common cost factors is the time these activities occur. For 4 example, infrastructure improvements at or near generation sites would be needed for some 5 generation sites (e.g., decommissioned sites) that no longer have the ability to transport SNF 6 from the current storage location to the national rail route. This cost was not quantified in this 7 EIS, because it (i) would be difficult to establish, (ii) would vary based on the individual 8 generation sites, and (iii) would be a common need for both the proposed CISF and the 9 No-Action alternative. It is also possible that transporting SNF across the country would require infrastructure 11 improvements along the national rail route. This could be the case for both the proposed CISF 12 and the No-Action alternative. However, because the routes for transportation have not yet 13 been established, the need for (and hypothetical cost of) infrastructure upgrades is speculative 14 and beyond the scope of the EIS.[55]

- Another cost factor shared by the proposed CISF and the No-Action alternative is emergency 16 preparedness along the SNF transportation route. States are recognized as responsible for 17 protecting public health and safety during radiological transportation accidents. Federal 18 agencies are prepared to monitor transportation accidents and provide assistance if requested 19 by States to do so. Nationwide, there are many shipments of radioactive material each year for 20 which the States already provide capable emergency response, and a discussion about funding 21 for emergency response is in EIS Section 4.11.[56]
- The NRC 18 staff assumed that the cost for transporting the SNF from the generation sites to the proposed 19 CISF would be the same as the cost for transporting the SNF from the proposed CISF to the 20 repository. For the SNF transportation to the repository, the NRC staff assumed that this cost 21 would be evenly distributed over the last 2 years of the proposed CISF license term for the 22 proposed action (Phase 1) and the last 10 years of the license term for full build-out 23 (Phases 1-8) (i.e., starting when the last SNF is received from the generation sites until the end 24 of the proposed CISF license term).
- "a SMALL to MODERATE and beneficial impact on local finances because of increased taxes and revenues, and a SMALL impact on employment, housing, school enrollment, and utilities and public services because of the influx of workers and their families from construction."[57]
- ISP stated that it may seek to renew the license and anticipates that the SNF would be stored at the CISF for 60 to 100 years (ISP, 2020).[58]
- Under the No-Action alternative, the NRC would not approve the ISP license application for the 26 proposed CISF in Andrews County, Texas. The No-Action alternative would result in ISP not 27 constructing or operating the

[55] ISP DEIS at 8-11.
[56] ISP DEIS at 8-11.
[57] ISP DEIS at 9-12.
[58] ISP DEIS at 9-16.

proposed CISF. No concrete storage pad or infrastructure 28 (e.g., rail sidetrack or cask-handling building) for transporting and transferring SNF to the 29 proposed CISF would be constructed. SNF destined for the proposed CISF would not be 30 transferred from commercial reactor sites (in either dry or wet storage) to the proposed facility.[59]

- The DOE's integrated waste management system would necessarily "include facilities and other key infrastructure needed to safely manage SNF from commercial nuclear reactors."[60] While the NRC admits "this alternative meets the purpose and need for the proposed action" it asserts that "the DOE has not released detailed information concerning the planned SNF interim storage facilities, such as . . . SNF transportation options and details. . .that would allow this alternative to be analyzed in detail." *Id.* NRC states that "[b]ecause the DOE's integrated waste management system is in the planning stages and provides no. . .transportation. . .details that would be needed for a comparison of environmental impacts, this alternative was eliminated from detailed consideration."
- The applicant's screening process determined that the Andrews County, Texas, site (i.e., the 2 proposed CISF site on the WCS property) had the fewest environmental and operational 3 impacts because of the availability of utilities, an established local nuclear-related labor culture, 4 and an existing site railhead, along with readily available site characterization data and existing 5 site infrastructure (ISP, 2020).[61]

***Preparing for Nuclear Waste Transportation: Technical Issues That Need to Be Addressed in Preparing for a Nationwide Effort to Transport Spent Nuclear Fuel and High-Level Radioactive Waste*, A Report to the U.S. Congress and the Secretary of Energy (Sept. 2019) (ADAMS Accession No. ML19297D146)**

[59] ISP DEIS at xxxviii.
[60] ISP DEIS at 4-22.
[61] ISP DEIS at 2-25.