

**United States Court of Appeals  
For the Fifth Circuit**

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No. 21-60743

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STATE OF TEXAS; GREG ABBOTT, GOVERNOR OF THE STATE OF  
TEXAS; TEXAS COMMISSION ON ENVIRONMENTAL QUALITY;  
FASKEN LAND AND MINERALS, LIMITED; and  
PERMIAN BASIN LAND AND ROYALTY OWNERS,

*Petitioners,*

v.

NUCLEAR REGULATORY COMMISSION;  
UNITED STATES OF AMERICA,

*Respondents.*

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**APPENDIX VOLUME IV**

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Texas Commission on Environmental  
Quality*

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<b>69</b>	<b>NUREG-0404</b> , excerpts, Draft Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel (March 1978)	<b>001407</b>
<b>70</b>	<b>NUREG-2157 (incorporated into C.I. 125)</b> , excerpts, Continued Storage Generic Environmental Impact Statement (September 2014)	<b>001424</b>



**CERTIFICATE OF SERVICE**

On this 16th day of May, 2022 a true and correct copy of the foregoing was filed with the Clerk's Office of the United States Court of Appeals for the Fifth Circuit, which currently provides electronic service on the counsel of record.

/s/ Allan Kanner  
Allan Kanner

**CERTIFICATION UNDER ECF FILING STANDARDS**

Pursuant to paragraph A(6) of this Court's ECF Filing Standards, I hereby certify that (1) required privacy redactions have been made, 5th Cir. R. 25.2.13; (2) the electronic submission is an exact copy of the paper document, 5th Cir. R. 25.2.1; and (3) the document has been scanned for viruses with the most recent version of a commercial virus scanning program and is free of viruses.

/s/ Allan Kanner  
Allan Kanner

# Tab 46



GOVERNOR GREG ABBOTT

September 10, 2021

The Honorable Christopher T. Hanson  
Chairman  
U.S. Nuclear Regulatory Commission  
Mail Stop 0-16 B33  
Washington, D.C. 20555-0001

Re: Interim Storage Partners (ISP) Consolidated Interim Storage Facility Project,  
Docket ID NRC-2016-0231

Dear Chairman Hanson:

In my capacity as Governor of Texas, I previously submitted comments opposing ISP's application for a license to construct and operate a consolidated interim storage facility in Andrews County, Texas. Despite Texas's strong opposition, the NRC has been rushing to issue the requested license. I am writing again to reiterate that the proposed ISP facility is unacceptable to the State of Texas, and to put the NRC on notice of an important legal development.

On September 2, 2021, the Texas Legislature overwhelmingly passed House Bill 7, which bans the storage and disposal of high-level radioactive waste and spent nuclear fuel in Texas. The legislation also prohibits the Texas Commission on Environmental Quality from issuing certain permits for the construction or operation of a facility that stores high-level radioactive waste or spent nuclear fuel. On September 9, 2021, I signed House Bill 7, and it immediately became law. A copy of the legislation is attached for the NRC's information.

As I wrote on November 3, 2020, the State of Texas has serious concerns with the design of the proposed ISP facility and with locating it in an area that is essential to the country's energy security. Now the State has made clear that a consolidated interim storage facility is not only unwelcome here, but illegal. To avoid the potential for costly and protracted litigation, I again urge the NRC to deny ISP's license application.

Sincerely,

A handwritten signature in black ink that reads "Greg Abbott".

Greg Abbott  
Governor

GA:cgd

**C.I. 127**

H.B. No. 7

1 AN ACT  
2 relating to the storage or disposal of high level radioactive  
3 waste.

4 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

5 SECTION 1. Section 401.003, Health and Safety Code, is  
6 amended by adding Subdivision (12 b) to read as follows:

7 (12 b) "High level radioactive waste" has the meaning  
8 assigned by 42 U.S.C. Section 10101(12) and includes spent nuclear  
9 fuel as defined by 42 U.S.C. Section 10101(23).

10 SECTION 2. Section 401.0525, Health and Safety Code, is  
11 amended by adding Subsection (c) to read as follows:

12 (c) With the exception of a permit for a facility located at  
13 the site of currently or formerly operating nuclear power reactors  
14 and currently or formerly operating nuclear research and test  
15 reactors operated by a university, the commission may not under the  
16 authority given to the agency under Section 301, 304, or 401 of the  
17 Clean Water Act (33 U.S.C. Sections 1311, 1314, and 1341) issue a  
18 general construction permit or approve a Stormwater Pollution  
19 Prevention Plan under Section 26.040, Water Code, or issue a permit  
20 under the Texas Pollutant Discharge Elimination System Program  
21 under Section 26.027, 26.028, or 26.121, Water Code, for the  
22 construction or operation of a facility that is licensed for the  
23 storage of high level radioactive waste by the United States  
24 Nuclear Regulatory Commission under 10 C.F.R. Part 72. Section

H.B. No. 7

1 401.005 does not apply to this subsection.

2 SECTION 3. Subchapter C, Chapter 401, Health and Safety  
3 Code, is amended by adding Section 401.072 to read as follows:

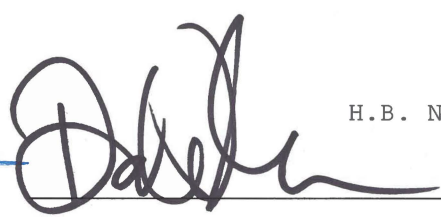
4 Sec. 401.072. DISPOSAL OR STORAGE OF HIGH LEVEL RADIOACTIVE  
5 WASTE. With the exception of storage at the site of currently or  
6 formerly operating nuclear power reactors and currently or formerly  
7 operating nuclear research and test reactors operated by a  
8 university, a person, including the compact waste disposal facility  
9 license holder, may not dispose of or store high level radioactive  
10 waste in this state.

11 SECTION 4. Section 401.0525(c), Health and Safety Code, as  
12 added by this Act, applies only to an application for a permit or  
13 permit amendment submitted on or after the effective date of this  
14 Act.

15 SECTION 5. If any provision of this Act or its application  
16 to any person or circumstance is held invalid, the invalidity does  
17 not affect other provisions or applications of this Act that can be  
18 given effect without the invalid provision or application, and to  
19 this end the provisions of this Act are declared to be severable.

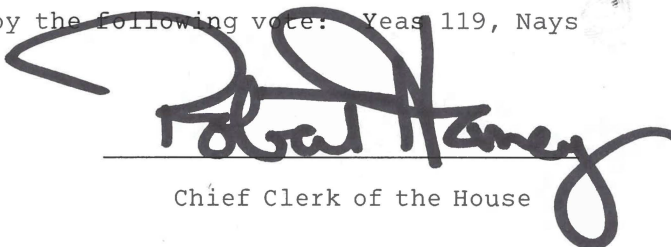
20 SECTION 6. This Act takes effect immediately if it receives  
21 a vote of two thirds of all the members elected to each house, as  
22 provided by Section 39, Article III, Texas Constitution. If this  
23 Act does not receive the vote necessary for immediate effect, this  
24 Act takes effect December 5, 2021.

H.B. No. 7

\_\_\_\_\_  
 President of the Senate                      Speaker of the House

I certify that H.B. No. 7 was passed by the House on August 30, 2021, by the following vote: Yeas 94, Nays 32, 1 present, not voting; and that the House concurred in Senate amendments to H.B. No. 7 on September 2, 2021, by the following vote: Yeas 119, Nays 3, 1 present, not voting.



\_\_\_\_\_  
 Chief Clerk of the House

I certify that H.B. No. 7 was passed by the Senate, with amendments, on September 1, 2021, by the following vote: Yeas 31, Nays 0.



\_\_\_\_\_  
 Secretary of the Senate

APPROVED: 9-9-21

Date



\_\_\_\_\_  
 Governor

FILED IN THE OFFICE OF THE  
SECRETARY OF STATE  
\_\_\_\_\_ O'CLOCK

SEP 09 2021



\_\_\_\_\_  
 Secretary of State

**C.I. 127**

**From:** [Wes Hambrick](#)  
**To:** [Wes Hambrick](#)  
**Subject:** [External\_Sender] Letter from Governor Abbott  
**Date:** Friday, September 10, 2021 3:27:26 PM  
**Attachments:** [image001.png](#)  
[Governor Abbott letter 9-10-2021.pdf](#)

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Good afternoon—

Please see the attached letter from Governor Abbott regarding Interim Storage Partners application for a license to construct and operate a consolidated interim storage facility in Andrews County, Texas. Please let us know if you have any questions.

Thank you,  
Wes

**Wes Hambrick**  
Executive Director  
Texas Office of State-Federal Relations  
202.434.0227 – Direct  
202.812.7690 – Mobile



# Tab 47



September 11, 2021

Office of Administration  
Mail Stop: TWFN-7-A60M  
Attn: Program Management, Announcements and Editing Staff  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUNI Review Complete  
Template=ADM-013  
E-RIDS=ADM-03  
ADD: Donald Habib, Christine Richie,  
Mary Neely

Comment (1)  
Publication Date 9/17/2021  
CITATION 86 FR 51926  
PMD-07201051

Subject: Submittal of Comments on Final Environmental Impact Statement (FEIS) for Interim Storage Partner's (ISP's) License Application for a Consolidated Interim Storage Facility (CISF) in Andrews County, Texas, Docket ID NRC-2016-0231

- Reference:
1. "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, Final Report," NUREG-2239, Published on August 5, 2021, Docket ID NRC-2016-0231-0387 (ML2120A120).
  2. Federal Register Notice: Issuance of Environmental Impact Statement for Interim Storage Partners Consolidated Interim Storage Facility License Application, August 5, 2021 (86 FR 43277) (ML2120A120).
  3. Federal Register Notice: Environmental Protection Agency Receipt of Environmental Impact State for Interim Storage Partners Consolidated Interim Storage Facility License Application, August 13, 2021 (86 FR 44711 at 44712)

Undersigned counsel represents Permian Basin Coalition of Land and Royalty Owners and Operators (PBLRO) and Fasken Land and Minerals, Ltd. (FLML or Fasken) relating to the above-referenced matter. PBLRO and FLML have engaged consultants in the review of the FEIS for ISP's License Application for a CISF in Andrews County, Texas relating to Docket ID NRC-2016-0231. Please find enclosed consultant comments presented in Attachment 1 identifying procedural and environmental gaps, insufficient technical analyses and mitigation planning, and improper dismissal of major viewpoints with respect to the U.S. Nuclear Regulatory Commission's (NRC) assessments provided in ISP's FEIS for consideration.

PBLRO and/or FLML previously submitted comments in the ISP scoping process, in response to ISP's draft EIS, as well as actively participating in the underlying NRC administrative proceeding.<sup>1</sup>

We look forward to the NRC's and/or the U.S. Environmental Protection Agency's (EPA) responses to attached.

Sincerely,

/s/ Allan Kanner  
Allan Kanner

KANNER & WHITELEY, LLC

---

<sup>1</sup> PBLRO and FLML intend on submitting additional comments in response to ISP's FEIS under separate cover.

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cc via email:

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# Attachment 1

# Final Environmental Impact Statement Review for Consolidated Nuclear Storage Facility, Andrews County, TX

## Prepared for:

Kanner and Whiteley, LLC  
701 Camp Street  
New Orleans, LA 70130

Great Ecology – San Diego  
2251 San Diego Ave., A218  
San Diego, CA 92110

September 2021





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## 1.0 OVERVIEW

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A private company, Interim Storage Partners (ISP) applied in 2016 to license and construct a Consolidated Interim Storage Facility (CISF) of high-level nuclear waste (HLW) in Andrews County, Texas (FIGURE 1). The facility, located at the Texas-New Mexico border in the county, is proposed as an “interim” measure before a permanent repository of such materials is approved and constructed. The Nuclear Regulatory Commission (NRC) is the lead agency overseeing the National Environmental Protection Act (NEPA) process to determine what environmental impacts could exist if such a facility was constructed, operated, and (ultimately) decommissioned. The NRC released its Final Environmental Impact Statement (FEIS) in July 2021, with NRC staff recommending that “subject to the determinations in the staff’s safety review of the application, the proposed license be issued to ISP to construct and operate a CISF at the proposed location to temporarily store up to 5,000 MTUs [metric tons of uranium] of SNF [spent nuclear fuel] for a licensing period of 40 years” (NRC 2021, page 2-29).

Myself and my team at Great Ecology have reviewed relevant materials from NRC’s FEIS for the Andrews County CISF. This project has met severe opposition from local, regional, and national stakeholders. Prominent environmental advocacy groups like the Sierra Club are on the same side as private companies in oil and gas exploration, with both groups raising concerns over the destructive impacts HLW storage would have in the region. There is bipartisan political opposition to the project from both the Democratic and Republican governors of New Mexico and Texas. This project will likely continue to face significant backlash from concerned citizens and industries, NEPA regulations notwithstanding.

Figure 1: Proposed ISP CISF Facility (from NRC 2021: Figure 2.2-1)





I believe the FEIS was conducted with a pre-determined outcome and did not take the requisite "hard look" as required by NEPA. Many components were not accurately evaluated such as:

- The purpose and need of the facility is not "interim;"
- The technical studies undertaken for the NEPA analysis were piecemealed across several years and therefore the FEIS does not provide a thorough and consistent evaluation for some issues;
- The alternatives analysis does not sufficiently evaluate all 'reasonable' alternatives to the project;
- The Environmental Justice analysis should be updated after NRC completes its internal policy;
- The No Action Alternative was poorly elucidated and not evaluated adequately;
- Not all cumulative impacts are identified for transportation, groundwater, ecology (particularly wildlife), and climate change, and the geographic extents used for cumulative impact evaluation are arbitrary and incorrect;
- The mitigation analysis is not robust, does not place any responsibility on NRC for ensuring mitigation is implemented, and does not include an analysis of the likelihood of implementation of those mitigation measures outside the NRCs jurisdiction. For example, NRC assumes that mitigation for emergency response will be the responsibility of local first responders, even though the additional risks, training, and costs for such emergency response were not evaluated in the FEIS;
- NRC showed an almost total disregard for public input on the FEIS, and dismissed several comments without adequate explanation or evaluation;
- Several categories were determined to have SMALL/MODERATE impacts, without a careful evaluation of the magnitude of actual impacts; and
- The ecological resource analysis is incomplete and insufficient for multiple wildlife species of conservation significance.



## 2.0 PROCEDURAL GAPS

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The NRC received over 10,000 comments as part of the public comment process, with multiple comments highlighting deficiencies in the FEIS evaluation (see: NRC 2021, Comments D.2.1.1 through D. 2.1.17, pages D-2 through D-12). My team and I identified many issues with the FEIS that are illustrative of a poorly done NEPA process by NRC, discussed further below.

### 2.1 *Purpose and Need: Not an “Interim” facility*

The “interim” facility described by NRC does not provide adequate assurance that the CISF project is not a permanent repository. “Interim” implies that there is a final, long-term solution established already (i.e., a permanent repository of HLW has already been approved and constructed). The current purpose and need states that the facility would receive and store HLW “before a permanent repository is available” (NRC 2021, page 1-3), which heightens the risk that this facility could serve as a *de facto* permanent repository.

This is a major concern that has been brought up by multiple experts and government officials, including the governors of New Mexico and Texas. In public comments submitted by Tami Thatcher on behalf of the Environmental Defense Institute (November 2018), the “interim” status without the existence of licensed permanent disposal effectively results in the stranding of NSW at the ISP facility for an undetermined duration potentially exceeding the ISP facility’s license period or the time horizon upon which the NEPA evaluation was based. Governor Greg Abbott of Texas wrote a letter opposing after reviewing the draft Environmental Impact Statement (EIS) in November 2020. Governor Abbott also raised concerns about the “interim” definition of the facility, and noted that the EIS

“[S]imply assumes ... that a permanent geologic repository will be developed and licensed before 60 years are up, without addressing any contingency for the spent nuclear fuel if such a repository is not ready when ISP’s license expires” (Abbott 2020).

Governor Michelle Lujan Grisham of New Mexico has raised similar concerns about “interim” storage, pointing out that “at this time, the NRC cannot guarantee that a permanent repository for spent nuclear fuel in the United States will be developed in 40, 80, or 120 years” (Grisham 2020).

The statement that this will be an “interim” storage facility of HLW is deliberately misleading. Policymakers and experts are rightly pointing out the high risk of the waste becoming abandoned, since a permanent repository does not exist to eventually accept the waste, nor is there a reasonable evidentiary basis for NRC to so find.

## ***2.2 NEPA Studies: Piecemeal***

The studies for NEPA were performed in piecemeal, which weakens the overall FEIS analysis and does not present a clear picture of all impacts from these discrete sections. Study timelines vary in the document, with some studies being performed in the early and mid-2010s (Socioeconomics and Environmental Justice, Cultural and Historical Resources) and others as recent as 2020. Several studies were not performed by NRC, rather by other federal agencies or by other third parties that did not perform studies explicitly for NEPA. NRC relies on these analyses without further evaluating how each individual study relates to the others; with this piecemeal approach, impacts cannot be evaluated across time or space. The FEIS should not have been siloed.

The deference to NRC's authority should only be limited to their subject(s) of expertise and should not extend to all categories in the FEIS. NRC staff are experts in nuclear safety and radioactive exposures/risks, and as such their opinions on the FEIS should be deferred to if making a decision on safety risks. However, NRC grants itself deference for their NEPA determinations on issues outside of their realm of expertise, although such deference is illogical. For example, nationwide transportation is regulated by the Department of Transportation (USDOT) and the Federal Highway Administration (FHWA); as such, USDOT and FHWA should be deferred to for opinions and interpretations. NRC cannot be an expert in every evaluation; if an impact is not within their purview for evaluation, their determinations should be given less deference.

## ***2.3 Alternatives Analysis: Insufficient***

NEPA requires a review of reasonable project alternatives. Alternative analyses should clearly indicate why and how the range of project alternatives was developed, including what kind of public and agency input was used. In addition, alternatives analysis should explain why and how alternatives were eliminated from consideration. It must be made clear what criteria were used to eliminate alternatives, at what point in the process the alternatives were removed, who was involved in establishing the criteria for assessing alternatives, and the measures for assessing the alternatives' effectiveness.

Section 2.2 of the FEIS identifies the alternatives considered for detailed analysis including the Proposed Action and the No Project Alternative. Meanwhile, Section 2.3 of the FEIS identifies eight alternatives eliminated from detailed analysis including:

- 1) Storage at a government-owned CISF operated by the Department of Energy (DOE);
- 2) Alternative Design or Storage Technologies, which had three alternatives including:
  - a) DCSS Design Alternatives,
  - b) Hardened Onsite Storage Systems (HOSS),
  - c) Hardened Extended-Life Local Monitored Surface Storage (HELMS); and
- 3) Location Alternatives (four options).



The alternatives eliminated from consideration were eliminated (respectively) for the following reasons:

- 1) In planning stages lacking siting and design necessary for comparison of impacts.
- 2) a) new technology too speculative to be considered.  
b) generalized concept lacking detailed plans necessary for detailed safety, environmental, and cost/benefit analysis and does not meet the purpose and need for the proposed action.  
c) lacking sufficient location-specific information for detailed analysis and would not fully meet the purpose and need of the proposed action.
- 3) None clearly environmentally preferable to ISP's proposed site.

Section 2.3 of the FEIS does not explicitly state objective criteria used to eliminate alternatives instead eliminating some alternatives based on the stage of development, speculative nature of technologies, or the failure of an alternative to meet the proposed action's purpose and need. If an alternative is eliminated from further consideration because it "does not meet the purpose and need," the lead agency must adequately explain how or why this alternative doesn't meet the purpose and need (USDOT 2021). Narrowly written purpose and need statements, which are designed to limit alternative review, are dubious and, as described above, the purpose and need stated in the ISP FEIS fails to adequately acknowledge the possibility that the ISP project may in fact become *de facto* permanent storage without better assurances to the contrary. Finally, Section 2.3 of the FEIS identifies who was involved in establishing the criteria for assessing alternatives or measures for assessing the alternatives' effectiveness as required under NEPA.

Previous NEPA documents for "interim" nuclear storage facilities have evaluated multiple alternatives as part of the general analysis. For instance, NRC compiled an FEIS for a proposed CISF storage facility in Utah that incorporated three different alternatives for analysis, including alternatives for technology, sites, and transportation options (NRC et al. 2001). This current FEIS does not follow past precedent, and as such needs to include a more thorough evaluation and analysis of any and all alternatives to the proposed project.

## ***2.4 Environmental Justice: Evaluation Needs to be Updated***

President Joe Biden issued Executive Order (EO) 14008 in January 2021, which addresses several environmental issues like climate change, deforestation, and non-renewable energy. Chief among the Administration's priorities is environmental justice, and the EO directs federal agencies to "develop programs, policies, and activities to address the disproportionate health, environmental, economic, and climate impacts on disadvantaged communities" (White House 2021). The NRC is in the process of updating its policy and guidance documents relating to environmental justice evaluations and is currently accepting public comments through September 22, 2021. Therefore, it is likely that NRC will update its policy by the end of September or October 2021. With this in mind, the current FEIS should be suspended until NRC establishes a policy and guidance reflective of the goals in the 2021 EO. When NRC has established final guidance in the future, the environmental justice portion of the FEIS should be re-evaluated.

## ***2.5 No Action Alternative: Dismissed and Not Carefully Evaluated***

The FEIS does an insufficient job of elucidating the status quo or No Action Alternative and of analyzing the impacts of a No Action Alternative. NEPA requires Federal lead agencies to always describe and analyze a “no action” alternative in an EIS. In simple terms, a No Action Alternative considers the effects of not approving the action under consideration. The No Action Alternative analysis provides a benchmark to allow decision makers and the public to compare the levels of environmental effects of the alternatives.

Within the FEIS, characterization of the No Action Alternative or status quo is entirely dismissed. It is not purely a default to the existing environmental setting. Implicit in the comparison of impacts is consideration that status quo itself has benefits as well as drawbacks, and very little if any effort is provided in the FEIS to explicitly identify these. For example, within Table 2.4-1, under the topic of Socioeconomics, the No Action Alternative is indicated to have no impact significance, while clearly, some sort of beneficial impact to local finance (identified in the adjacent column for the proposed action) is being sacrificed under the No Action Alternative without being included in the analysis. This illustrates that a thoughtful analysis is lacking because the No Action Alternative or status quo was insufficiently evaluated.

## ***2.6 Cumulative Impacts Analysis: Insufficient***

Cumulative impacts under NEPA are defined 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” (40 CFR § 1508.7). The FEIS does not thoroughly evaluate the cumulative impacts of the ISP CISF Project along with all other past, present, and reasonably foreseeable future projects in the project vicinity. Of major concern, many cumulative impacts are evaluated across geographic scales that do not accurately represent the scope and scale of potential impacts or underlying social, ecological, geological, or hydrological processes. FIGURE 2 and TABLE 1 depict all impact radii across categories; of note, these are variable and are not applied across all categories. For example, cumulative impacts to ecological resources are only evaluated within a 5-mile buffer around the ISP site; in contrast, transportation is evaluated within a 50-mile buffer. There is little to no explanation for why ISP chose these radii for ecology and transportation, and if in fact these buffers truly represent cumulative impacts from the site (which, in the case of these two categories, they do not). For these and other radii chosen by ISP, NRC blindly accepted these values without further discussion or evaluation in the FEIS.

Notably, several categories of assessment show considerable deficiencies in the depth and detail of analysis, including (but not limited to):

- Transportation;
- Groundwater resources;
- Ecological impacts on wildlife; and
- Climate change.

Figure 2: Cumulative Impact Radii from ISP FEIS (NRC 2021)

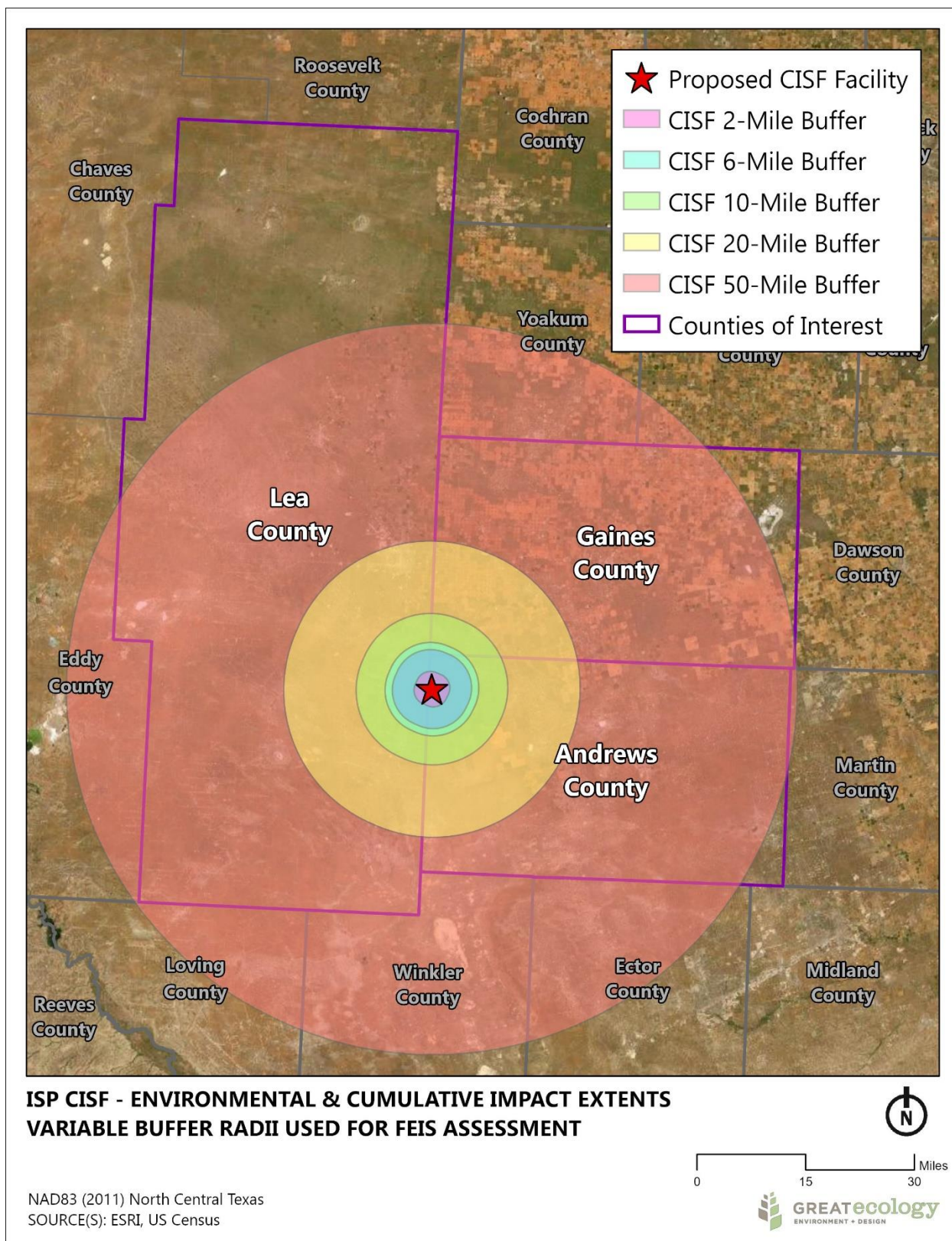




Table 1: Variable Radii for Environmental and Cumulative Impacts Analysis, ISP FEIS

Impact Type*	NEPA Category	Radius of Evaluation
<b>Environmental</b>	Ecology	2 miles
	Air Quality	
	Historical & Cultural Resources	
	Visual & Scenic Resources	
	Land Use	5 miles
	Transportation	
	Geology & Soils	
	Water Resources	
	Environmental Justice	50 miles
	Public & Occupational Health	
	Waste Management	
	Socioeconomic	Andrews County and Gaines County, TX; Lea County, NM
	<b>Cumulative</b>	Land Use
Ecology		6 miles
Air Quality		
Noise		
Visual & Scenic Resources		10 miles
Historical & Cultural Resources		
Groundwater		20 miles
Transportation		50 miles
Geology & Soils		
Water Resources		
Environmental Justice		
Public & Occupational Health		
Waste Management		
Socioeconomic	Andrews County and Gaines County, TX; Lea County, NM	

### 2.6.1 Transportation

The FEIS assumes all effects from transportation would be incremental over time. This does not appear to be the case as this facility would increase the region's importance as a HLW storage and disposal destination increasing traffic volumes in a more than incremental manner. In addition, the arbitrary radius imposed on the cumulative impact assessment does not appear to appropriately consider the national and regional sources of HLW and long-distance freight system impacts.

The FEIS also downplays the nationwide extent of where HLW would be arriving from, since HLW is currently stored at nuclear energy facilities dispersed throughout the country. FIGURE 3 shows the locations of nuclear reactor sites across the US, along with the railroad network that would need to be utilized to transport waste currently existing at these sites. Illustrations and figures in the FEIS do not show the true breadth of this problem, and instead separately show the rail network and decommissioned nuclear power plants (FIGURE 4). HLW is spread throughout the country, and the extent of its transportation to the ISP CISF facility has a much larger impact (and would be more than 'incremental') than the FEIS presents. It also ignores what the surrounding local community looks like, and what sensitive receptors could be most impacted. FIGURE 5 depicts several facilities with vulnerable populations in the area (an extrapolation of the rail network presented by NRC in FIGURE 4); many of these sensitive receptors are located quite close to the railroads in the area. Should any accident occur in the future, these people would certainly be impacted quite heavily.

Figure 3: Nuclear Reactor Sites throughout the United States and Nationwide Railroad Network

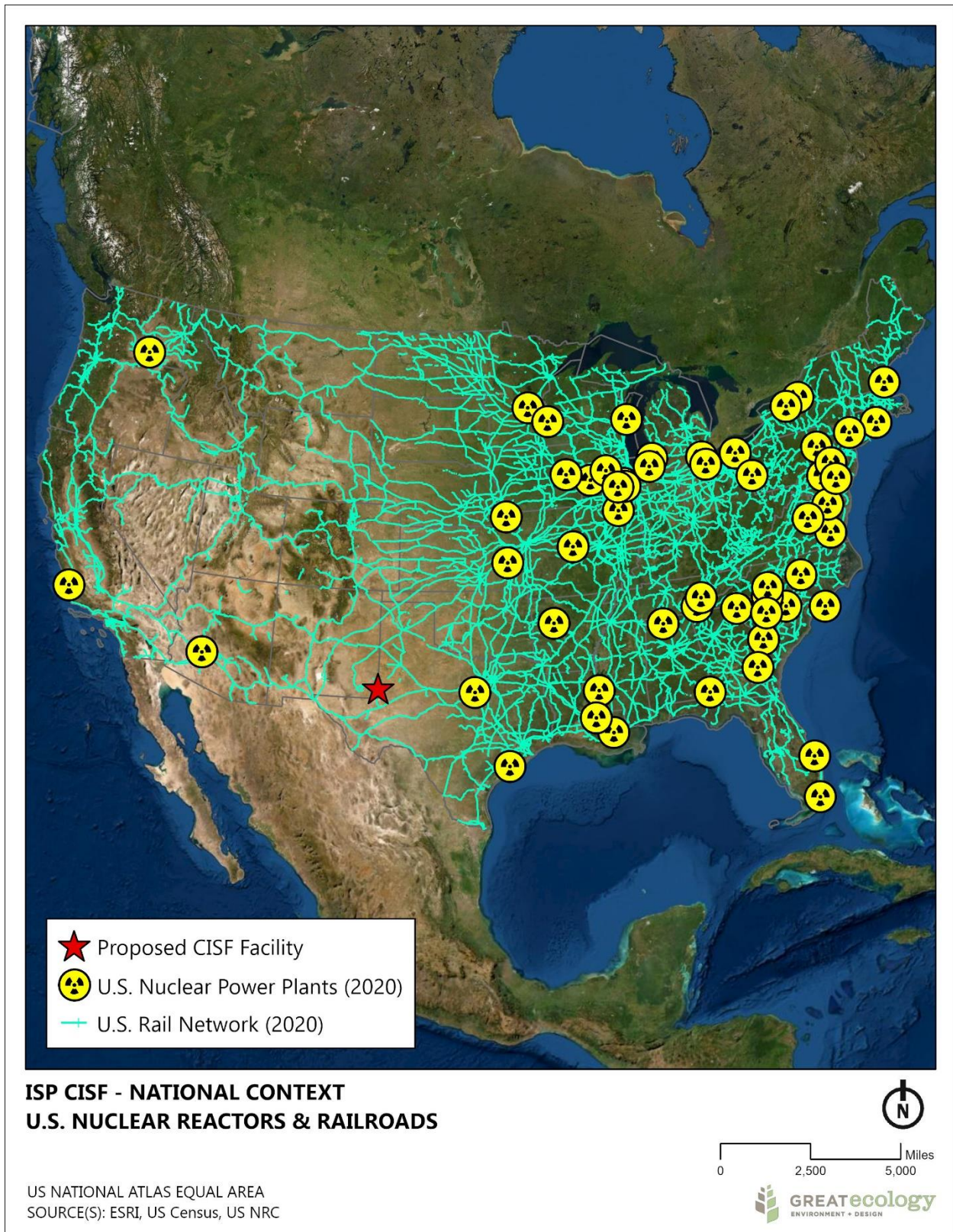




Figure 4: Nuclear Transportation Figures from the ISP FEIS. CISF Facility is depicted by red star. **Top:** Decommissioned Nuclear Waste Sites in the United States (Figure 2.2-4). **Bottom:** Location of Railroads in West Texas and Southeastern New Mexico (Figure 2.2-7) (NRC 2021)

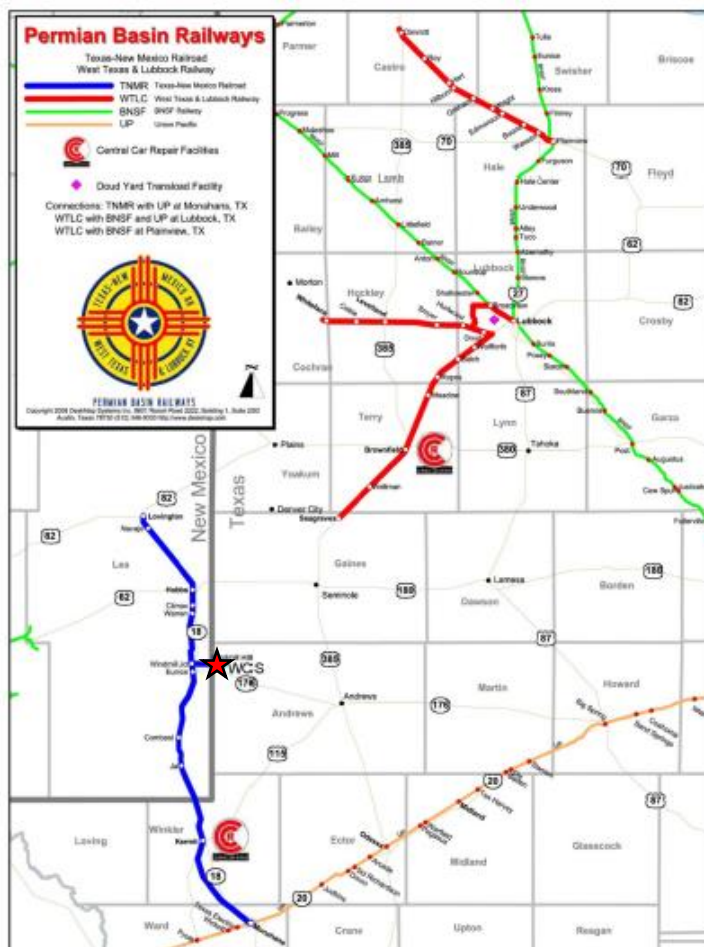
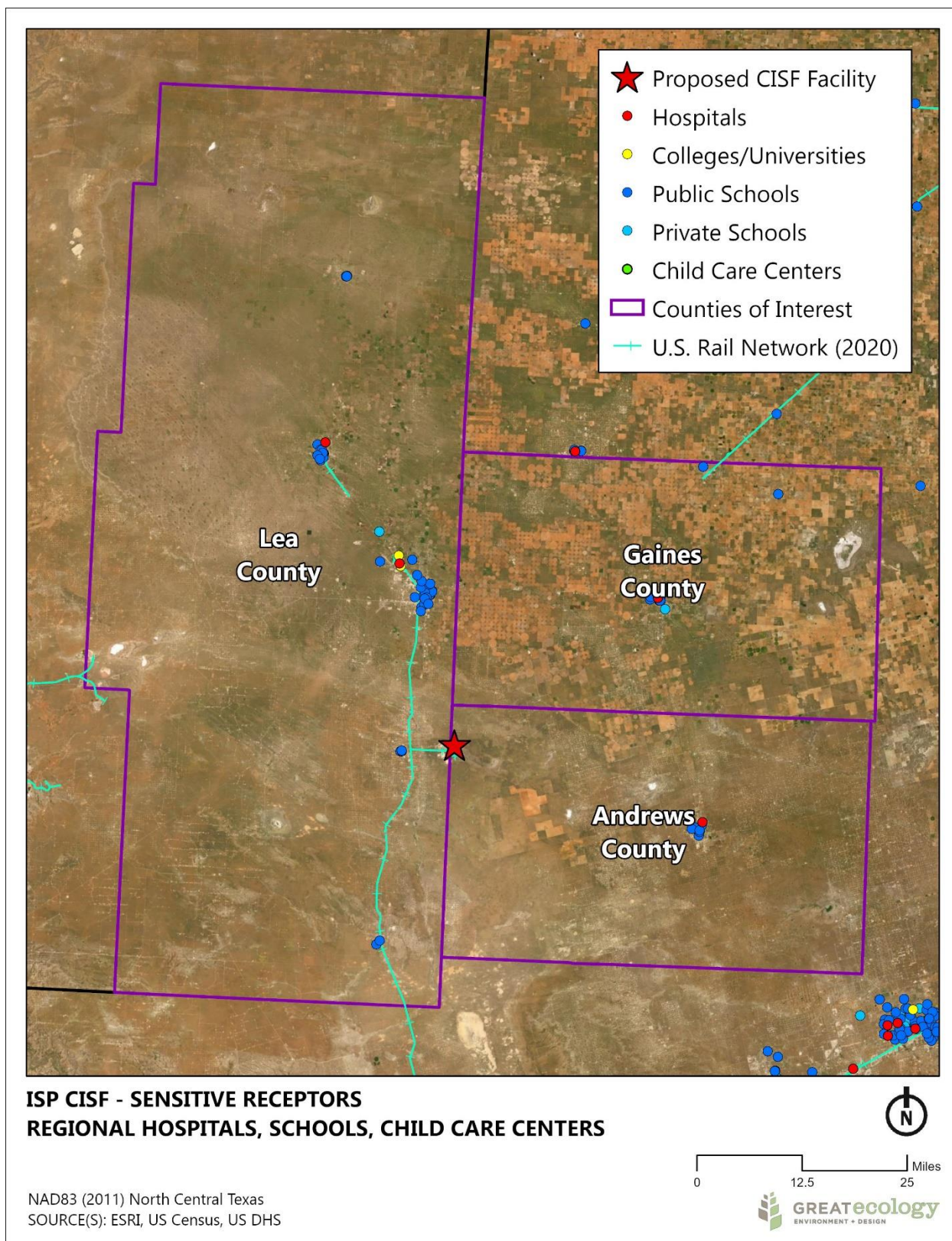


Figure 5: Sensitive Receptors Close to the ISP CISF and Regional Railroad Network





As New Mexico Governor Grisham accurately critiques in her letter to NRC, the transportation of spent nuclear fuel across the nation to CISF facilities is complex and extremely dangerous (Grisham 2020). Safe transportation of spent nuclear fuel requires both well-maintained infrastructure and highly specialized emergency response equipment and personnel that can respond quickly to an incident at the facility or on transit routes. Routes have to be agreed upon, weight capacity limits for existing rail systems need to be addressed, local first responders (emergency and medical) across the country have to be trained, and critical infrastructure and equipment need to be designed and deployed. Even with well-maintained infrastructure and best practices, some spent nuclear fuel in storage is not fit for transport.

Sections 3.3.2 and 4.3 of the FEIS indicate that prior transportation analyses including the final State Environmental Impact Report (SEIR) for Yucca Mountain and NRC's NUREG-2125 risk assessment provide sufficient information about potential transportation routes to support the analysis of transportation impacts. The NRC evaluation considers the routes evaluated in these prior transportation analyses to be representative or bounding for SNF shipments to and from the proposed ISP CISF project because they were derived based on typical transportation industry route selection practices. However, in comments on the draft EIS, the Western Interstate Energy Board (WIEB) High-Level Radioactive Waste (HLRW) Committee (WIEB 2020) encouraged the NRC to fully evaluate all reasonable modes and routes that could be used for nuclear waste transportation to the ISP CISF and opined that operational factors that should have been fully considered including:

- An analysis of the effects of different transportation operating protocols on shipment safety;
- Of the level of emergency preparedness along likely shipping routes;
- Of requisite coordination and communication with affected states, tribes, and other important stakeholders; and
- An analysis of the impact on shipment numbers and safety of using any of the variety of transportation casks that are licensed for use.

The WIEB HLRW Committee also stated that "NUREG-2125 is an obsolete and inapplicable reference for an environmental impact analysis of the ISP CISF." NRC does not provide justification for disregarding this valid criticism of their risk assessment procedures.

The WIEB HLRW Committee also offers valid evidence that the existing railroad infrastructure and equipment is currently inadequate for the task of HLW transportation to the ISP CISF facility noting: "there would have to be enough railcars (assuming a mostly-rail transportation system) to support this shipment rate, and the railcars would have to be compliant with the Association of American Railroads (AAR) S-2043 standard. As of now, there are no manufactured railcars that are compliant with this standard. DOE's Atlas railcar design is currently being tested to certify its compliance with S2043, but this certification is not expected to be complete until 2022 at the earliest."

### 2.6.2 Groundwater

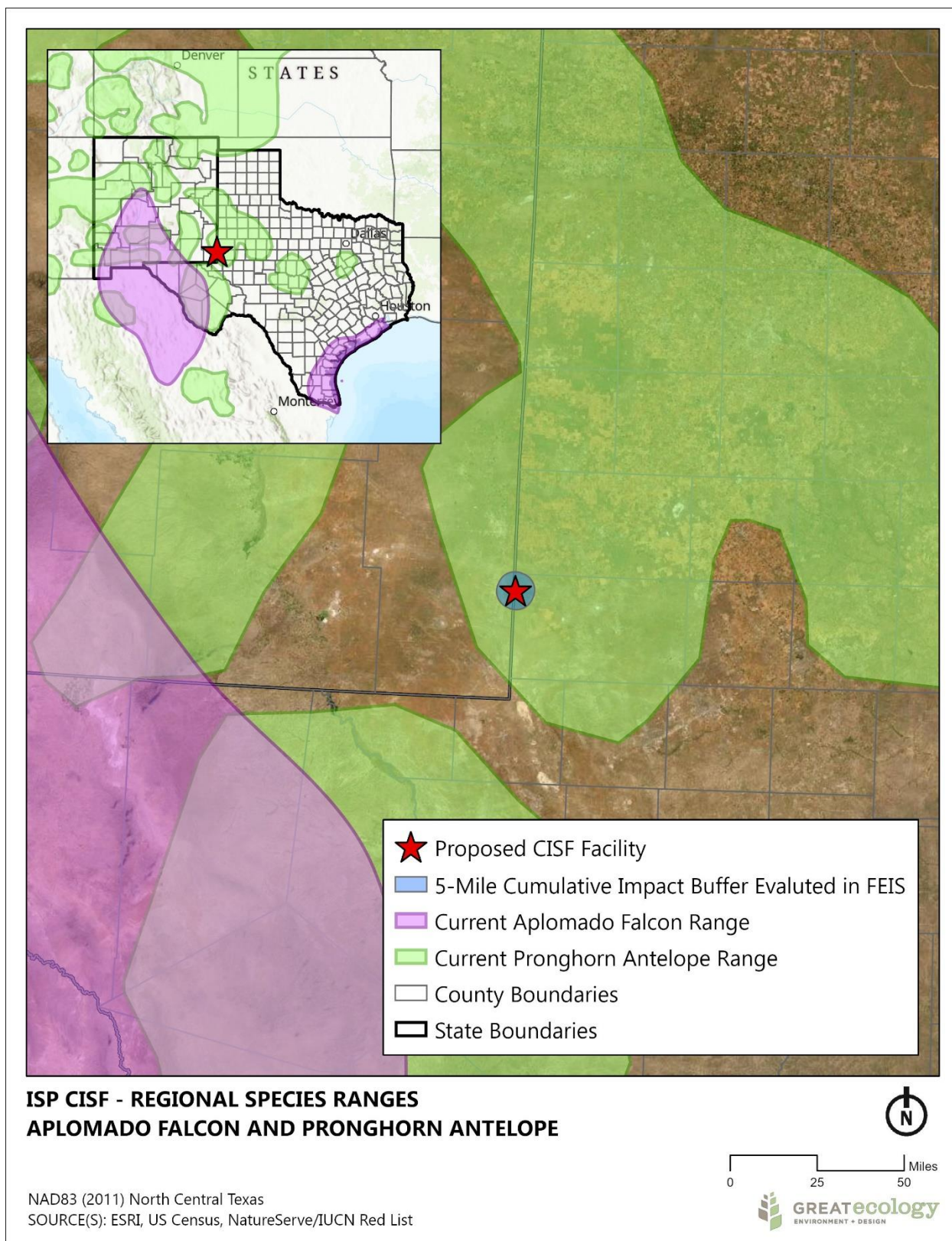
The FEIS arbitrarily identifies a 20-mile cumulative impact evaluation radius for groundwater from the ISP Project. The FEIS further states that, of the nuclear facilities in the region only the existing Waste Control Specialists (WCS) facility, National Enrichment Facility (NEF), and Eden Radioisotopes are within the 20-mile groundwater study area. By arbitrarily limiting the study area dimensions, thorough evaluation of cumulative impacts of ISP and other past, present, and reasonably foreseeable projects to groundwater resources are precluded. As the Permian Basin Coalition and Fasken Land and Minerals' previous comments on the ISP draft EIS (PBLRO & FLML 2020) noted, the geographic formation (Central Basin Platform) is heavily-faulted and the Project's seismic hazard analysis was deficient. The PBLRO/FLML letter also calls attention to the ISP environmental analyses' failure to mention and characterize the Rio Grande Rift (RGR), which it characterizes as critical in understanding the geological and geohydrological history of the aquifers at the CISF and potential risks to groundwater resources and seismology (PBLRO/FLML 2020). In light of the analysis' arbitrarily limited spatial scale in a region of obvious seismic risk, evaluation of cumulative impacts to groundwater resources is clearly inadequate.

### 2.6.3 Wildlife (Ecology)

Once again, the FEIS arbitrarily identifies a small, 5-mile cumulative impact evaluation radius for wildlife from ISP Project. NRC states that their ecological cumulative impacts analysis is "limited to this radius because ecological resources are not anticipated to influence or to be influenced by the proposed CISF project outside of this area." This statement is not supported by any real scientific evidence and does not consider the wide ranges of several species with the potential to occur onsite. Migratory birds would most certainly be impacted outside of a 5-mile radius from the project, along with any highly mobile species.

We discuss two species with wide-reaching ranges that were not examined thoroughly as part of the ecological cumulative impacts analysis: the endangered northern Aplomado falcon (*Falco femoralis septentrionalis*), and a regionally important game species, the pronghorn antelope (*Antilocapra americana*). Both species have a much wider reaching range than five miles, which is not captured by the FEIS cumulative impact radius (FIGURE 6).

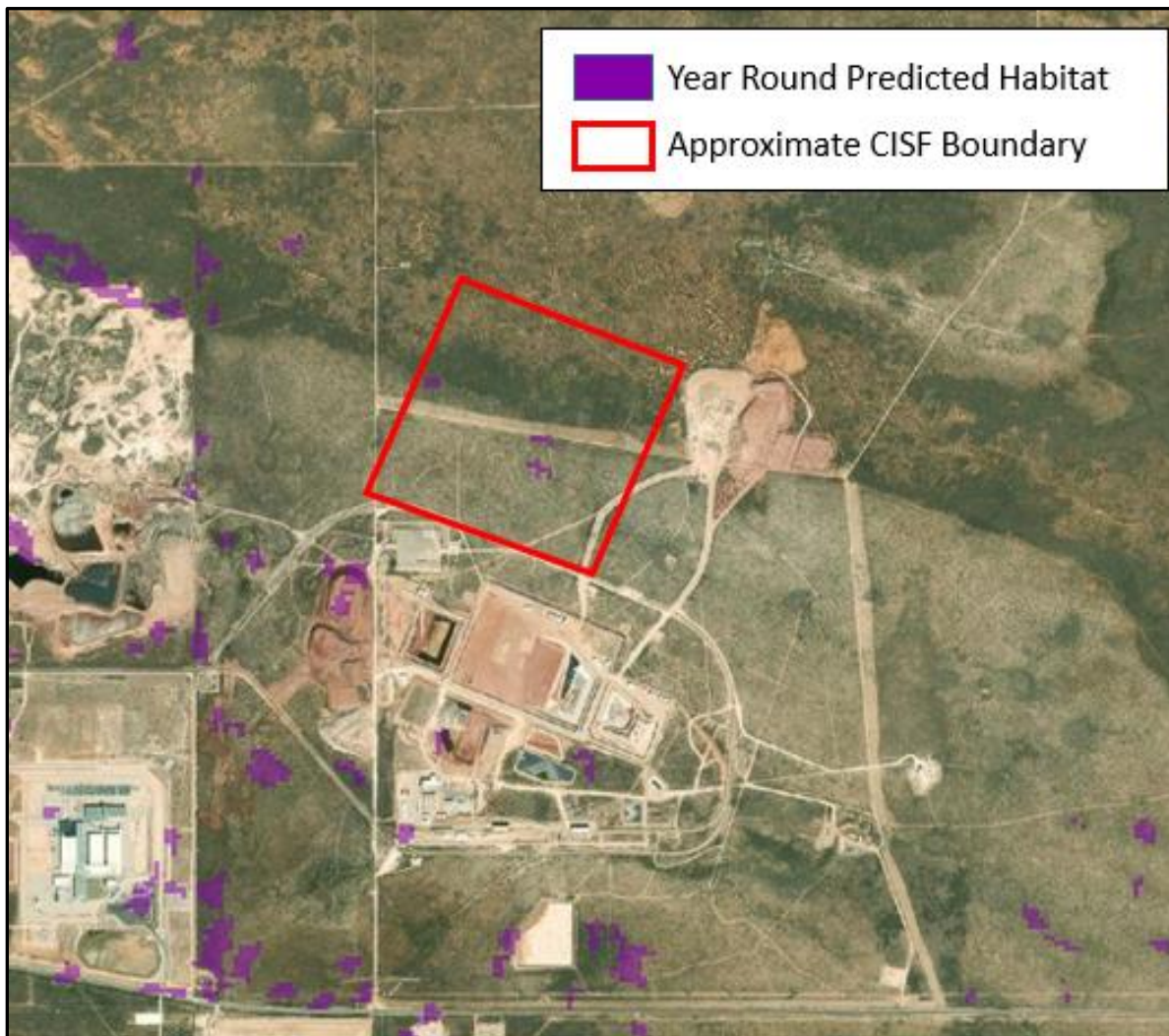
Figure 6: Current Species Ranges for Northern Aplomado Falcon and Pronghorn Antelope



**Northern Aplomado Falcon**

The U.S. Endangered Species Act of 1973 (ESA) regulates the ‘take’ of federally-listed threatened and endangered species. One federally-listed endangered species has a known range that includes the ISP Project site and surrounding environs (FIGURE 7). The northern Aplomado is a federally-listed Endangered Species with mapped range in western Texas and eastern New Mexico and a published Recovery Plan (USFWS 1990). The ESA has a recovery standard: in other words, the goal of the ESA is to recover a listed species to the point at which it can be delisted. This project, as well as other past, present, and reasonably foreseeable future projects in the region would together have cumulative impacts across a fairly substantial part of the historical former range of the species precluding the recovery of the species. Since this project is located within the species’ historic range, it follows that destruction of habitat would inhibit the recovery of this species and potential future delisting. The FEIS does not evaluate or address the recovery plan currently in place for this species and needs a more thorough analysis of the ESA relating to the northern Aplomado falcon.

*Figure 7: Predicted Habitat Map, Northern Aplomado Falcon (USGS GAP 2021)*



### ***Pronghorn antelope***

Similarly, the pronghorn antelope is a highly migratory game species which ranges across the southwestern U.S. It is an important, state-managed game species in both Texas and New Mexico which attracts hunters and wildlife enthusiasts to the region. Because of this, the herds of pronghorn antelope possess interstate commerce value as harvestable game. The proposed project, as well as other past, present, and reasonably foreseeable future projects (and their freight and construction traffic) would result in fragmentation of pronghorn antelope range and loss of habitat connectivity, potentially affecting the management and viability of herds migrating in both states. Habitat fragmentation and cumulative project impacts to migratory corridors for pronghorn antelope and other wide-ranging species are not discussed in the FEIS.

### **2.6.4 Climate Change**

The FEIS evaluates climate change as part of air quality impacts (NRC 2021, Section 3.7.1.1 and Section 4.7.2). However, climate change does not solely impact atmospheric processes or the abiotic environment. All species (humans included) will have to adjust their behavior and range in response to climate or perish. Cumulative impacts of the ISP Project and other past, present, and reasonably foreseeable future projects on land use must be evaluated in tandem with reduced agricultural productivity of cropland and rangeland in the west Texas / eastern New Mexico region resulting from anthropogenic climate change. Similarly, the analysis of cumulative impacts of the ISP Project and other past, present, and reasonably foreseeable projects (notably highly consumptive mining and oil and gas production facilities) on groundwater resources and their sustainability must acknowledge growing uncertainty related to precipitation patterns, drought intensity, and other projections identified in Section 3.7.11.

Additionally, NRC (and the U.S. Fish and Wildlife Service [USFWS]) should take shifting species distributions resulting from climate change into consideration when evaluating the cumulative impacts of current and reasonably foreseeable future projects on federally-listed and potential candidate species.

### **2.7 Mitigation Planning: Insufficient**

One of the main stated purposes of NEPA is to “promote efforts which will prevent or eliminate damage to the environment and biosphere” (42 USC § 4321). This is generally accomplished through mitigation measures, such as restoration, avoidance of habitat, and/or reduction of harm. Monitoring is also an important factor to determine mitigation success, so any mitigation strategy needs to also include a robust monitoring program.

Mitigation planning is a critical part of the NEPA process; however, I find the NRC’s mitigation strategy lacking in several areas, including:

- No timeline for execution of mitigation;
- Proposed mitigation is not the responsibility of the lead agency (NRC); and
- No probability analysis of mitigation implementation.

### **2.7.1 Nonexistent Mitigation Timeline**

All the mitigation measures provided by NRC appear to be deferred actions (as in, mitigation for project impacts is proposed but not evaluated further within a project timeline). No timeline is clearly stated in the document as to when mitigation would occur, and whether or not mitigation would delay or change their construction timeline. As an example, for surface water resources ISP proposes mitigation through “compliance with the Construction General Permit requirements and a Storm Water Pollution Prevention Plan (SWPPP)” (NRC 2021) However, ISP does not indicate when this SWPPP would be developed. NRC appears to push all mitigation (voluntary or required) to the future, thus thorough evaluation of proposed mitigation is not presented.

### **2.7.2 Mitigation Outside of Lead Agency Jurisdiction**

Time and again in the FEIS, NRC indicates that permits and plans will be developed for the project which will identify future mitigation requirements.

For project-related impacts and cumulative impacts to geology and soils, ecological resources, groundwater, surface water, and logically public health and other issues NRC indicates that mitigation measures and Texas Pollutant Discharge Elimination System (TPDES) permit requirements (including spill prevention and cleanup plans) would limit soil loss, avoid soil contamination, and minimize stormwater runoff impacts. For impacts to surface waters and wetlands, NRC indicates that the applicant would develop and implement a Stormwater Pollution Prevention Plan (SWPPP). Meanwhile, a TPDES industrial stormwater permit would set limits on the amounts of pollutants entering ephemeral drainages.

Similarly, during the operations phase of the ISP Project, the applicant would be expected to implement a Spill Prevention, Control, and Countermeasures (SPCC) Plan to minimize the impacts of potential soil contamination, and stormwater runoff would be regulated under TPDES permit requirements.

This reliance on TPDES general construction permit, industrial stormwater permit, SWPPP, SPCC, and other plans and permits represents a whole suite of mitigation measures outside of the jurisdiction of NRC where enforcement would become the responsibility of the State of Texas / Texas Commission on Environmental Quality (TCEQ) or other responsible parties.



### 2.7.3 Probability of Mitigation Unclear

NEPA guidance stipulates that if a mitigation measure is not within the jurisdiction of the Lead Agency that the probability of implementation needs to be discussed:

“[T]hus the EIS and the Record of Decision should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies. Sections 1502.16(h), 1505.2. If there is a history of nonenforcement or opposition to such measures, the EIS and Record of Decision should acknowledge such opposition or nonenforcement. If the necessary mitigation measures will not be ready for a long period of time, this fact, of course, should also be recognized” (46 FR 18026, March 23, 1981).

The ISP FEIS makes no determination of the likelihood of mitigation implementation by other responsible parties, therefore there is not adequate assurance (or enforcement) that the identified mitigation will be implemented as described. In this respect, the language of Section 6.3 of the FEIS is incomplete and inadequate.

This is concerning, especially considering NRC will not be responsible for this facility beyond approval and licensing. As an example, the FEIS assumes emergency response actions will be mitigated through coordination with local authorities, fire departments, medical facilities, and other emergency services before operations begin (NRC 2021, page 6-11). NRC also acknowledges that any first responders will require additional training and equipment to handle an emergency involving highly radioactive nuclear waste but did not evaluate these or the costs of such actions any further. NRC states that:

“ISP did not provide a detailed estimate of the additional training and equipment that would be necessary to respond to an incident at the proposed CISF project that are not currently available to first responders, and local agencies nor officials have not conducted studies with this type of information. Therefore, a detailed analysis of the costs associated with these potential additional resources are not evaluated in detail in this EIS” (NRC 2021, page 4-74).

No such analysis in the FEIS is an obvious and glaring omission in evaluating the facility’s operations and demonstrates once again that NRC is not carefully considering the impacts this facility will have on local communities. NRC is placing both the burden and cost of risk management onto local authorities, without assuring that those entities are well-informed of the responsibilities, costs, and risks, to approve, monitor, and enforce these mitigation actions. These omissions are further examples of systemic problems and persistently inadequate analyses throughout the FEIS, and further evidence of NRC’s failure to take a “hard look” at impacts in violation of NEPA.

## ***2.8 Public Input: Dismissed or Ignored***

There is very high public and private interest in this project, with the public raising several valid concerns on both the project itself and the NEPA process. NRC initially received almost 29,300 comments during their 2016–2018 scoping period (NRC 2020). Responses to specific sections from the public included:

- Transportation: safety/accident increases, radiation dose to citizens near rail lines;
- Geology: induced seismicity from activities;
- Water Resources: water is located near the surface, potential contamination of the Ogallala Aquifer;
- Location/Land Use: facility is located within an existing waste storage facility, other co-located activities;
- Socioeconomics: Greater impact on New Mexico since the site is directly adjacent to its border; and
- Environmental Justice: disproportionate impacts on Hispanic populations (NRC 2020).

In its FEIS, NRC categorizes the public comments into major sections and summarizes their response to the generalized comments, presented in D.2 of the FEIS. For every comment section, the NRC justifies their response and made virtually no changes or edits to the FEIS in response to public input. This is alarming, especially considering the wide range of concerns the public raised in response to the proposed facility. NRC's dismissal of the public points even closer to a predetermined outcome of this evaluation – to permit a highly risky facility quickly and without approval for the people most impacted by its operations.

Of note, the site selection process for the Andrews CISF facility required public input and consent. However, NRC decided that they had sole purview over this decision and did not seek public input on alternative sites. NRC relied solely on ISP's assessment process and did not perform any additional due diligence or consult with the public in the area. Public comments pointed out that "ISP's site selection process was not rigorous and focused on political community input and location rather than environmental impacts" (NRC 2021, page D-42). This shows a clear lack of concern for the surrounding community and stronghold to put a facility wherever the applicant (ISP) decides fit.

## ***2.9 Impact Analysis: Not Robust for Several Categories***

An agency preparing an EIS takes a hard look at the environment affected by a project, by dividing the 'affected environment' into several categories. Impacts are then categorized into one of three terms defined by NEPA, based on the severity of the impact:

- SMALL: effects are not detectable or are so minor that they neither destabilize nor noticeably alter any important attribute of the resource.
- MODERATE: effects are sufficient enough to alter noticeably but not destabilize important attributes of the resource.
- LARGE: effects are clearly noticeable and are sufficient enough to destabilize important attributes of the resource.



NRC's evaluation of the affected environment determined most impacts would be SMALL, with only two categories (Ecology and Socioeconomic) potentially having MODERATE impacts (TABLE 2).

*Table 2: Impact Evaluation of ISP's CISF facility. Taken from NRC's October 5, 2020, public comment webinar (NRC 2020)*

<b>Resource</b>	<b>Impact Evaluation (includes proposed action and additional phases)</b>
<b>Land Use</b>	SMALL
<b>Transportation</b>	SMALL
<b>Geology and Soils</b>	SMALL
<b>Surface Water</b>	SMALL
<b>Groundwater</b>	SMALL
<b>Ecology</b>	SMALL to MODERATE
<b>Air Quality</b>	SMALL
<b>Noise</b>	SMALL
<b>Historic and Cultural</b>	SMALL
<b>Visual and Scenic</b>	SMALL
<b>Socioeconomic</b>	SMALL to MODERATE* (* on population growth and beneficial on local finances)
<b>Environmental Justice</b>	There would be no disproportionately high and adverse impacts to either minority or low-income populations
<b>Public and Occupational Health</b>	SMALL
<b>Waste Management</b>	SMALL

After evaluating the FEIS and feedback from the public, I find it difficult to believe that most impacts would only be SMALL. As described above, many of these analyses were constricted by application of an arbitrary geographic scope of evaluation for cumulative impacts. If evaluated with a more appropriate radius for transportation, as an example, effects would at least be MODERATE, if not LARGE. NRC seems to deliberately obfuscate the environmental justice effects of the project and does not make a decision if the impacts fit into one of the three levels of significance. Rather, NRC states that there would be no 'disproportionately high and adverse' impacts to low income or minority communities - leading to the conclusion that impacts could, in fact, be MODERATE or LARGE on *all* populations in the area. We discuss the ecological impacts further below in this document; however, based on our evaluation of both immediate and cumulative impacts, effects on ecological resources would be MODERATE and/or LARGE, especially for the two species discussed above (the Aplomado falcon and pronghorn antelope). These final impact determinations are clearly skewed towards a favorable outcome where impacts are only SMALL; both short-term and cumulative impacts therefore require a new evaluation to determine which impacts are not truly SMALL.

## 3.0 ENVIRONMENTAL GAPS

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Great Ecology is comprised of a team of several interdisciplinary ecologists. As such, myself and my team evaluated the FEIS through the lens of the environment surrounding this project. Water resources and geology/seismology were not evaluated thoroughly for cumulative impacts, as discussed above. In addition, we found several deficiencies with the ecological resource analysis, particularly related to impacts on resident and migratory wildlife species. The cumulative impacts of the ISP Project and other past, present, and reasonably foreseeable future projects on two such species (northern Aplomado falcon and pronghorn antelope) were discussed above. In this section, additional species and concerns are discussed.

### 3.1 Ecology

The project is located within High Plains Levell III ecoregion (CMEC 2019). Previously surveyed habitat within the CISF project footprint includes:

- 230.5 acres of Mesquite thorn-scrub;
- 76.0 acres of Havard oak (*Quercus havardii*, also referred to as shinnery oak) dunes; and
- 17.8 acres of maintained grassland (CMEC 2019).

NRC states that the proposed project would result in the destruction of 109 acres of mesquite scrub and the disturbance of all shinnery oak dune habitat onsite (76 acres), resulting in total direct habitat impacts of at least 185 acres (NRC 2021 pages 4-40 and 4-42).

Both mesquite thorn-scrub and shinnery oak dunes were identified in the FEIS and ecological survey with the potential to support migratory birds and sensitive species (CMEC 2019, NRC 2021 page 3-38). Mesquite thorn-scrub onsite was identified as suitable habitat for the Texas horned lizard (*Phrynosoma cornutum*), a state threatened species (CMEC 2019). Shinnery oak dunes were also identified as suitable habitat for dunes sagebrush lizard (*Sceloporus arenicolus*) and lesser prairie-chicken (*Tympanuchus pallidicinctus*), two species of conservation interest in both Texas and New Mexico (CMEC 2019).

Shinnery oak systems are a rare habitat type in the United States, with the geographic extent limited to southeastern New Mexico, western Texas, and western Oklahoma (Peterson and Boyd 1998). Species who occupy these habitats are, in turn, often specialists and rare themselves – as is the case with the dunes sagebrush lizard and lesser prairie-chicken. The U.S. Fish and Wildlife Service estimated approximately one million acres of habitat in 1982; by 2010, that number had decreased to 600,000 acres (USFWS 2010). This is an approximate 40 percent loss in shinnery oak dune habitat over time; this number is almost certainly higher based on the widespread amount of development (and proposed development) in these areas, suggesting today maybe only 400,000 acres remain.



NRC reviewed ecological surveys and federal/state databases and identified one federally protected species (the northern Aplomado falcon) and several species of interest that could be impacted by the CISF project, as previously discussed. However, impacts to these species were not adequately evaluated by the FEIS, and/or other species of regional or state interest were not (but should have been) evaluated. Although many species identified are not currently listed under the federal ESA, they are on state endangered/threatened species lists and/or of conservation interest. These species need suitable attention and evaluation of impacts.

Based on the information presented in the FEIS, I identified the following deficiencies in ecological impact analysis:

- No thorough evaluation of the ESA with regards to recovery of the Aplomado falcon;
- No alternatives or contingencies presented to account for potential future listing of endangered species (i.e., lesser prairie-chicken and dunes sagebrush lizard);
- No analysis or presentation of destructive impacts of habitat fragmentation on species;
- No impact determination on interstate game species (pronghorn antelope); and
- No evaluation of additional sensitive species with the potential to occur onsite.

Individual species and concerns surrounding their analysis are discussed further below.

### **3.1.1 Northern Aplomado Falcon**

The project site was identified within the habitat range for northern Aplomado falcon, a federally- and state-listed endangered species. The falcon nests in abandoned nests created by other raptors; these inactive nests were observed onsite during the most recent ecological survey (CMEC 2019). The FEIS assumes that the project will have no impacts on the Aplomado falcon; however, this analysis shows a very limited scope of evaluation under the ESA, in particular with respect to identifying obstacles to species recovery. This is discussed further above as a deficiency in evaluating cumulative impacts under NEPA.

### **3.1.2 Dunes Sagebrush Lizard**

A species of greatest conservation need in Texas, the dunes sagebrush lizard occupies shinnery oak dune habitat found onsite. ISP has acknowledged that this species has been observed in the area northwest of the proposed CISF project area in past surveys; NRC therefore assumes that this lizard may be present during the project (NRC 2021, page 3-52 and page 4-40). NRC acknowledges in the FEIS that "the project would potentially disturb or kill lizards during Phase 1 construction, but not in sufficient numbers to affect the local populations of these species" (NRC 2021, page 4-40). NRC recommends ISP implement several conservation measures within suitable habitat during the project (NRC 2021, page 6-8 through 6-9).

First, the NRC does not provide any evidence that dunes sagebrush lizards harmed or killed would not be in 'sufficient numbers' to affect the local population. Although no study yet exists on the exact population, the estimated number of lizards is estimated between 10,000 and 100,000, with a conservative estimate of one adult per hectare of suitable habitat (Hammerson 2007). Previous surveys in Texas have found dunes sagebrush lizards in all sites surveyed in Andrews County (n =

19; Fitzgerald et al 2011); therefore, lizard populations are likely higher in the County and more vulnerable to habitat threats. Any impacts to their habitat will likely have a major effect on this already rare species. The NRC does not clearly define how many lizards could be impacted by construction of the facility, nor does it explain how killing lizards will 'not affect' the local population.

The dunes sagebrush lizard is not a migratory species and only occupies shinnery-oak habitat; any habitat loss (including loss resulting from this project) will have dramatic effects on the lizard populations in both Texas and New Mexico. NRC is aware of this, stating that the dunes sagebrush lizard is "not a highly mobile species and is confined to small home ranges within the active sand dune-shinnery oak habitat type, between 0.044 to 0.28 hectare [0.1 to 0.7 acre] in size" (NRC 2021, page 4-40). As a result of their small range, the dunes sagebrush lizard is highly sensitive to fragmentation; a study in New Mexico found that these lizards were found significantly less in fragmented areas, compared to unfragmented habitat (Walkup et al 2017). In many cases, the study found *zero* dunes sagebrush lizards in fragmented habitat, where lizards had been present in previous years (Walkup et al. 2017). These effects are well documented in literature, and the FEIS should analyze the foreseeable/cumulative effects of habitat fragmentation on the lizard that, in their own admission, has been observed onsite.

USFWS has announced a 12-month finding review period to address listing the dunes sagebrush lizard on the ESA. The 12-month finding was expected as of July 2021; however, USFWS has not released any further information regarding listing as of this date. As with the lesser-prairie chicken, The FEIS should include alternatives that prepare for any potential ESA listing (including the lesser prairie-chicken), and how this would impact the project in the foreseeable future of the project.

### 3.1.3 Lesser Prairie-chicken

A species of greatest conservation need in Texas, this bird also occupies shinnery oak dune habitat found onsite. An online mapper confirms that suitable habitat exists for the chicken onsite (SGP CHAT 2021). NRC concluded in the FEIS that although the lesser prairie-chicken is unlikely to occur or be disturbed by construction (NRC 2021, page 4-41), ISP should follow recommendations to "monitor the listing status of the lesser prairie-chicken and enroll in the voluntary Range-Wide Conservation Plan" (NRC 2021, page 6-8).

Similar to the dunes sagebrush lizard, the lesser prairie-chicken faces threats from shinnery oak dune habitat destruction. The chicken is currently managed regionwide under a voluntary program called a Candidate Conservation Agreement with Assurances (CCAA). This voluntary program follows the guidelines established in a "Lesser Prairie-Chicken Range-wide Conservation Plan" established for the region (2013). Although the stated purpose of the program is to conserve and protect the species, the CCAA has ultimately led to further habitat destruction and not enough mitigation. An evaluation of the CCAA found that approximately 17,600 acres of restoration were complete from 2014 through 2019, which was two percent of the stated goal in the Lesser Prairie-Chicken Range-wide Conservation Plan (CBD 2021). Additionally, a total of 17,478 have reportedly been mitigated; this equates to a 124-acre positive difference between 'impacted' and 'restored' acres (CBD 2021). Clearly this plan is not enough to conserve this already rare habitat type, and



habitat destruction or fragmentation should be avoided to sustain the existing lesser-prairie chickens. As with the lizard, NRC did not look at shinnery oak dune habitat fragmentation impacts as a direct threat to this rare species, a threat that has been increasing over time.

There is also potential that the lesser prairie-chicken could be listed under the ESA in the future; however, the FEIS does not consider any alternative or contingency if any species becomes listed. The lesser prairie-chicken is currently being reviewed by the USFWS for ESA protection, with a public comment period ending on September 1, 2021. As currently written, the FEIS acknowledges that ISP will “monitor the listing status of the lesser prairie-chicken,” since “changes could potential require consultation, permitting, or mitigation with wildlife agencies in the future” (NRC 2021, page 4-43). Considering the lesser prairie-chicken was previously listed as a threatened species from 2014-2015 (USFWS 2021), it is reasonable to assume that the lesser prairie chicken could become listed again in the foreseeable future of this project. This shows a failure by NRC to consult or cooperate with the responsible federal agency (USFWS) regarding pending endangered species protection and critical habitat designation; furthermore, NRC did not evaluate the impacts or consult with USFWS should the shinnery oak dune habitat present at the site be designated as critical habitat. The FEIS should include alternatives that prepare for any potential ESA listing (including the lesser prairie-chicken), and how this would impact the project in the foreseeable future of the project.

### **3.1.4 Texas Horned Lizard (*Phrynosoma cornutum*)**

A state-listed threatened species in Texas, this lizard occupies mesquite habitat present onsite. It is intertwined with the state, as it is the Texas state reptile and the mascot of Texas Christian University. Although not observed during onsite surveys, their main prey source (harvester ants) were observed during surveys. NRC acknowledges in the FEIS that “the project would potentially disturb or kill lizards during Phase 1 construction, but not in sufficient numbers to affect the local populations of these species” (NRC 2021, page 4-40). NRC recommends ISP implement several conservation measures within suitable habitat during the project (NRC 2021, page 6-8 through 6-9).

As with the dunes sagebrush lizard, NRC does not clearly state what the ‘sufficient number’ of lizards harmed or killed that would impact the population. Horned lizard populations are declining throughout the state, so the lizards are mainly found in West Texas (CMEC 2019). Additionally, their main prey source, the harvester ant, is in turn becoming increasingly rare due to competition with nonnative fire ants (CMEC 2019). In essence, the horned lizard is most likely to exist within suitable mesquite habitat and with harvester ants. Both of these conditions already exist onsite; therefore, impacts to their habitat, and particularly their prey source, will likely have a major effect on this beloved species. The NRC does not clearly define how many lizards could be impacted by construction of the facility, nor does it explain how killing lizards will ‘not affect’ the local population.

### 3.1.5 Pronghorn Antelope

Suitable habitat for the pronghorn antelope was observed within the project site. Although not a listed species, the pronghorn antelope represents an important game species in both Texas and New Mexico. The FEIS assumes that the project will have no impacts on the pronghorn; however, this assumption does not thoroughly evaluate pronghorn game management across state lines and related impacts on interstate commerce. This is discussed further above as a deficiency in evaluating cumulative impacts under NEPA.

### 3.1.6 Other Sensitive Species Not Evaluated in FEIS

Although not a strict requirement under NEPA, the NRC's FEIS evaluated several species of regional conservation concern, such as the dunes sagebrush lizard and lesser prairie-chicken. However, the 2019 ecological survey identified several species with the potential to occur in the area, and that would be impacted by the project. It seems strange that NRC would selectively pick which species to evaluate outside of scope and not others. One species in particular, the Western box turtle (*Terrapene ornata*), was identified in the ecological survey as a species of greatest conservation need and observed onsite during surveys (CMEC 2019). It seems incomplete, therefore, to only evaluate impacts to certain sensitive species and not others. As such, the FEIS should have included an evaluation of the Western box turtle.



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## 5.0 QUALIFICATIONS

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I hold a Bachelor's degree in Environmental, Population, and Organismal Biology from University of Colorado, Boulder (1987), a Master's degree in Ecology and Evolution from Fordham University (1990), and a Doctor of Philosophy degree in Ecology and Evolution from Rutgers University (1995). I have lived in the City of San Diego, County of San Diego, California since 2010.

I am the CEO, President and Founder of Great Ecology and Environments, Inc. (dba Great Ecology), an environmental consulting firm, and have served in that capacity since 2001. The company ranges in size from 15 to 40 employees, and today has three main offices with full time staff based out of each office. Prior to founding Great Ecology, I worked as a senior scientist at TAMS, an engineering firm, and Exponent, Inc., a scientific consulting firm. In my more than 25 years of post-doctoral experience, I have worked on hundreds of projects in at least 25 states and Great Ecology has completed over 800 projects since its founding. I have worked on the ecological and environmental aspects of numerous projects, in part dealing with issues of contamination, fate and transport, and their impacts on ecological systems, with a focus on ecological site characterization, habitat restoration in urban areas, water quality impacts, and Natural Resource Damage (NRD) Assessments in all types of ecosystems, watersheds, and biological communities.

My work as an environmental expert involved in matters of pending, potential, or actual litigation includes cases across the United States. I have been deposed one time within the past two years. Several cases are in active litigation and are bound by confidentiality agreements. Some of my environmental projects involving litigation and/or expert or consulting witness work include:

- Release of PFAS at a US Air Force Base, New Mexico (current in MDL);
- Ethylene Oxide (EtO) release, New Mexico (current);
- Dollar General consumer fraud claim, New Mexico (current);
- NRDA and Habitat Restoration Hess/Buckeye Site, New Jersey (current);
- NRDA and Habitat Restoration Lail Site, New Jersey (current);
- NRDA and Habitat Restoration Quanta Site, New Jersey (current);
- NRDA and Habitat Restoration Curtiss-Wright Site, New Jersey (current);
- Alta Property, San Diego County, California (current);
- Pike Property, Riverside County, California (settled);
- Rainbow Property, San Diego County, California (settled);
- Vernal Pool Property, San Diego County, California (settled);
- Del Mar Fairgrounds, San Diego County, California (settled);
- Deepwater Horizon NRD Restoration Planning, Gulf Coast States & Federal Waters (settled);
- Port of Portland NRD, Oregon (settled);
- Raritan River Dam Removal NRD Settlement, New Jersey (settled);
- Woodbridge Remediation Case, New Jersey (settled);
- Missouri River Site NRD and Site Reuse Planning, Montana (settled); and
- Phosphate NRD, Idaho (settled).

# Tab 48

RECORD OF DECISION

**U.S. NUCLEAR REGULATORY COMMISSION  
RECORD OF DECISION  
INTERIM STORAGE PARTNERS LLC LICENSE APPLICATION FOR  
A CONSOLIDATED INTERIM STORAGE FACILITY, ANDREWS COUNTY, TEXAS**

Introduction

The U.S. Nuclear Regulatory Commission (NRC) staff prepared this record of decision (ROD) for the proposed Interim Storage Partners LLC (ISP) consolidated interim storage facility (CISF) in Andrews County, Texas. This ROD satisfies Section 51.102(a) of Title 10 of the *Code of Federal Regulations* (10 CFR), which states that “[a] Commission decision on any action for which a final environmental impact statement has been prepared shall be accompanied by or include a concise public record of decision.”

In July 2021, the NRC staff issued a final Environmental Impact Statement (FEIS) (NRC, 2021b) for ISP’s license application to construct and operate a proposed Waste Control Specialists (WCS) CISF (ISP, 2018a, 2018b, 2020a, 2020b, and 2021). In the FEIS, the NRC staff, in accordance with 10 CFR 51.91(d), sets forth its recommendation, pursuant to the National Environmental Policy Act of 1969, as amended (NEPA), regarding the proposed action. The NRC staff recommended that, subject to the determinations in the staff’s safety review of the application, the proposed license be issued to ISP to construct and operate a CISF at the proposed location to temporarily store up to 5,000 metric tons of uranium (MTUs) [5,500 short tons] of spent nuclear fuel (SNF) for a licensing period of 40 years (NRC, 2021b). The NRC staff has prepared this ROD in accordance with NRC regulations at 10 CFR Sections 51.102(b) and 51.103(a)(1)-(4). In addition, in accordance with 10 CFR Section 51.103(c), this ROD incorporates by reference the materials contained in the FEIS (NRC, 2021b).

The Decision

This ROD documents the NRC staff’s decision to issue a license to ISP for the proposed WCS CISF in Andrews County, Texas (NRC, 2021a). The license authorizes ISP to construct and operate its facility as proposed in its license application and under the conditions in its NRC license.

After weighing the impacts of the proposed action and comparing them to the No-Action alternative, the NRC staff, in accordance with 10 CFR 51.91(d), set forth its NEPA recommendation regarding the proposed action. The NRC staff recommended that, subject to the determinations in the staff’s safety review of the application, the proposed license be issued to ISP to construct and operate a CISF at the proposed location to temporarily store up to 5,000 MTUs [5,500 short tons] of SNF for a licensing period of 40 years. The staff based its conclusion on (i) review of the ISP license application, which includes the Environmental Report (ER) and supplemental documents (ISP, 2018a, 2018b, 2020a, 2020b, and 2021), and ISP’s responses to the NRC staff’s requests for additional information (RAIs) (ISP, 2019a and 2019b); (ii) consultation with Federal, State, tribal, and local agencies and input from other stakeholders, including public comment on the draft EIS; (iii) independent NRC staff review; and (iv) the assessments provided in the FEIS.

In its safety and security review, the NRC staff determined that the application met the applicable NRC regulations in 10 CFR Part 72, “Licensing Requirements for the Independent

Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste.” In issuing a materials license to ISP for the WCS CISF, the NRC determined that there is reasonable assurance that: (i) the activities authorized by the license can be conducted without endangering the health and safety of the public; and (ii) these activities will be conducted in compliance with the applicable regulations of 10 CFR Part 72. The NRC further determined that issuance of the license will not be inimical to the common defense and security.

### Background

In accordance with the NRC’s NEPA-implementing regulations in 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” the NRC staff prepares a site-specific EIS for the issuance of a license pursuant to 10 CFR Part 72 for the storage of spent fuel in an independent spent fuel storage installation (ISFSI) at a site not occupied by a nuclear power reactor (10 CFR 51.20(b)(9)). In this instance, the NRC’s major Federal action is to decide whether to issue a license authorizing ISP to construct and operate the WCS CISF for a 40-year license term.

The WCS CISF would store up to 5,000 MTUs [5,500 short tons] of SNF and Greater-Than-Class-C (GTCC) waste, along with a small quantity of mixed oxide (MOX) fuel (collectively referred to as SNF in the FEIS and in this ROD), which would originate from commercial nuclear reactor facilities in the United States, for a 40-year period at the site in Andrews County, Texas. During operation, the WCS CISF would receive SNF from decommissioned and decommissioning reactor sites, as well as from operating reactors prior to decommissioning (NRC, 2021b).

The WCS CISF would be built and operated on an approximately 130-hectare (ha) [320-acre (ac)] project area within a 5,666-ha [14,000-ac] parcel of land that is controlled by ISP joint venture member WCS in Andrews County, Texas. In addition, construction of the rail sidetrack, site access road, and construction laydown area would contribute an additional area of disturbed soil such that the total disturbed area for construction of the WCS CISF would be approximately 133 ha [330 ac]. The project area would be located north of WCS’s existing waste management facilities and controlled by ISP through a long-term lease from WCS (NRC, 2021b).

ISP would store SNF in six existing dual-purpose canister-based dry cask storage systems (DCSS) designed by TN Americas or NAC International. The 6 DCSS (3 from TN Americas and 3 from NAC International) consist of 11 different SNF canisters and 5 different GTCC waste canisters stored in 5 overpacks. SNF is stored horizontally in the TN Americas systems and vertically in the NAC International systems. The TN Americas and NAC International DCSS listed in the FEIS have been previously approved by the NRC for independent storage of SNF, GTCC, and a small amount of MOX fuel, pursuant to requirements in 10 CFR Part 72. In addition, the NRC approved both the TN Americas and NAC International systems for storage of SNF transported in canisters pursuant to the requirements in 10 CFR Part 71, “Packaging and Transportation of Radioactive Material.”

### Public Comments

On November 14, 2016 (81 FR 79531), the NRC staff published in the *Federal Register* a notice of intent to prepare an EIS and to conduct an environmental scoping process. The NRC staff invited potentially affected Federal, State, tribal, and local governments; organizations; and

members of the public to provide comments in the environmental scoping process and review. The initial scoping period closed on April 28, 2017. During this time, the NRC staff hosted four public scoping meetings, one in Hobbs, New Mexico, on February 13, 2017; a second in Andrews, Texas, on February 15, 2017; and two in Rockville, Maryland, on February 23, 2017 and April 6, 2017. Following a suspension of NRC's review at the applicant's request, ISP submitted a revised license application in June and July 2018 (ISP, 2018a). On September 4, 2018 (83 FR 44922), the NRC staff reopened the scoping period for the ISP license application. The reopened scoping period closed on November 19, 2018. The NRC staff issued a scoping summary report in October 2019 (NRC, 2019).

On May 4, 2020, the NRC staff issued the draft "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" (NRC, 2020).

A 120-day comment period began on May 8, 2020, when the U.S. Environmental Protection Agency (EPA) published a Notice of Availability in the *Federal Register* (85 FR 27412) of the draft EIS to allow members of the public and agencies time to comment on the results of the draft EIS. On July 22, 2020, the NRC staff extended the comment period an additional 60 days to close on November 3, 2020 (85 FR 44330). Additionally, the NRC staff held public meetings on October 1, 6, 8, and 15, 2020, to discuss the preliminary findings in the draft EIS, with transcripts of these meetings available at the NRC public project webpage: <https://www.nrc.gov/waste/spent-fuel-storage/cis/waste-control-specialist.html>.

Responses to all public comments received during the draft EIS comment period are included in Appendix D to the FEIS.

### Alternatives Considered

In its environmental review, the NRC staff evaluated the environmental consequences of the proposed action (i.e., authorizing the construction and operation of the WCS CISF), and the environmental consequences of the No-Action alternative (i.e., not licensing the WCS CISF). FEIS Chapter 2, "Proposed Action and Alternatives," and Chapter 4, "Environmental Impacts," present the NRC staff's evaluation and analysis of the environmental impacts of the proposed action and the No-Action alternative that were considered, as well as those alternatives that were eliminated from detailed study (NRC, 2021b). The NRC staff discusses the reasons for eliminating these alternatives in Section 2.3 of the FEIS. These alternatives included (1) storage of SNF at a government-owned CISF operated by the U.S. Department of Energy (Section 2.3.1); (2) alternative design or storage technologies (Section 2.3.2); and (3) alternative CISF locations (Section 2.3.3).

After weighing the impacts of the Proposed Action, comparing them to the No-Action alternative, and conducting a safety and security review of the Proposed Action, the NRC staff determined that the NRC should issue a license for the proposed WCS CISF project. The NRC staff based its decision on: (i) review of ISP's license application (ISP, 2018a, 2018b, 2020a, 2020b, and 2021), which includes the ER and supplemental documents, and ISP's responses to the NRC staff RAs (ISP, 2019a and 2019b); (ii) consultation with Federal, State, tribal, and local agencies and input from other stakeholders, including public comment on the draft EIS (see Appendix D in the FEIS); (iii) independent NRC staff review; (iv) the assessments in the FEIS (NRC, 2021b); and (v) the NRC staff's assessments in the Final Safety Evaluation Report (NRC, 2021c) for the WCS CISF.

### Mitigation Measures

The NRC has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the proposed action (license issuance). The applicant has committed to a number of mitigation measures as described in Table 6.3-1 of the FEIS (NRC, 2021b). As documented in the FEIS, the NRC determined that impacts to most resource areas would be SMALL (i.e., not detectable or minor), with SMALL to MODERATE beneficial impacts for local finance and MODERATE impacts (i.e., sufficient to alter noticeably, but not to destabilize, important attributes of the resource) for vegetation, population growth, and employment (NRC, 2021b). The NRC is not imposing any license conditions in connection with mitigation measures for the licensing of the WCS CISF. ISP is subject to requirements including permits, authorizations, and regulatory orders imposed by other Federal, State, and local agencies governing facility construction and operation. ISP's monitoring programs for the proposed project are described in Chapter 7 of the FEIS (NRC, 2021b).

### References

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10 CFR Part 71. Code of Federal Regulations, Title 10, *Energy*, Part 71, "Packaging and Transportation of Radioactive Material." Washington, DC: U.S. Government Publishing Office.

10 CFR Part 72. Code of Federal Regulations, Title 10, *Energy*, Part 72. "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." Washington, DC: U.S. Government Publishing Office.

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ISP. "Supplemental Information in Support of NRC's Environmental Review, Docket 72-1050 CAC/EPID 001028/L-2017-NEW-0002." ADAMS Accession No. ML20071F153. Andrews, Texas: Interim Storage Partners LLC. 2020b.

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NRC. "Materials License SNM-2515, Interim Storage Partners, WCS Consolidated Interim Storage Facility ISFSI." ADAMS Accession No. ML21188A099. September 13, 2021; Washington, DC: U.S. Nuclear Regulatory Commission. 2021a.

NRC. NUREG-2239, "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 – Final Report." ML21209A955. July 2021; Washington, DC: U.S. Nuclear Regulatory Commission. 2021b.

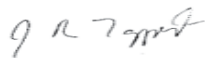
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Dated at Rockville, MD, this 13<sup>th</sup> day of September 2021,

APPROVED BY:



Signed by Tappert, John  
on 09/13/21

John R. Tappert, Director  
Division of Rulemaking, Environmental, and  
Financial Support  
Office of Nuclear Material Safety  
and Safeguards

# Tab 49



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 13, 2021

Mr. Jeffery D. Isakson  
Chief Executive Officer/President  
Interim Storage Partners LLC  
P.O. Box 1129  
Andrews, TX 79714

SUBJECT: ISSUANCE OF MATERIALS LICENSE NO. SNM-2515 FOR THE  
WCS CONSOLIDATED INTERIM STORAGE FACILITY INDEPENDENT SPENT  
FUEL STORAGE INSTALLATION (DOCKET NO. 72-1050)

Dear Mr. Isakson:

By letters dated June 8 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18166A011), and July 19, 2018 (ADAMS Accession No. ML18206A595), as amended, Interim Storage Partners LLC (ISP) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) requesting a site specific license in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72 for WCS Consolidated Interim Storage Facility (CISF).<sup>1</sup> This proposed facility is to be located in Andrews County, Texas.

NRC has determined based on its review of this application that there is reasonable assurance that: (i) the activities authorized by the license can be conducted without endangering the health and safety of the public; and (ii) these activities will be conducted in compliance with the applicable regulations of 10 CFR Part 72. NRC has further determined that the issuance of the license will not be inimical to the common defense and security.

NRC hereby issues Materials License No. SNM-2515 to ISP, pursuant to 10 CFR Part 72. A copy of the license is enclosed. Issuance of this license constitutes authorization for a 40-year term to receive, possess, store, and transfer spent fuel and associated radioactive materials at the WCS CISF. All future communications regarding this license should refer to Materials License No. SNM-2515, Docket No. 72-1050. The WCS CISF license contains license conditions and Technical Specifications that must be met in order to comply with NRC regulations.

The technical basis for issuing the license is set forth in the enclosed safety evaluation report for the WCS CISF. In connection with the decision to issue this license, the NRC prepared and published an environmental impact statement and record of decision. A notice of issuance for the environmental impact statement appears in the *Federal Register* dated August 6, 2021 (86 FR 43277). The NRC also prepared and issued a record of decision for issuing this license in accordance with 10 CFR, Section 51.102(a). In conjunction with sending this letter, the NRC

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<sup>1</sup> Waste Control Specialists LLC submitted the original application on April 28, 2016 (ADAMS Accession No. ML16182A162). ISP resubmitted an updated application following its formation as a joint venture between Waste Control Specialists and Orano CIS LLC, a subsidiary of Orano USA.

J. Isakson

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has transmitted a notice of the record of decision and the issuance of this license to the Office of the Federal Register.

If you have questions regarding this license, please contact me at (301) 287-9104, or Mr. John-Chau Nguyen of my staff at (301) 415-0262 or [John-Chau.Nguyen@nrc.gov](mailto:John-Chau.Nguyen@nrc.gov).

Sincerely,

**Shana R.  
Helton**

Digitally signed by  
Shana R. Helton  
Date: 2021.09.13  
08:49:44 -04'00'

Shana R. Helton, Director  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 72-1050  
Materials License No. SNM-2515  
EPID No. L-2017-NEW-0002

Enclosures:

1. Preamble to Materials License No. SNM-2515
2. Materials License No. SNM-2515
3. Technical Specifications
4. Safety Evaluation Report

cc: w/o Enclosures  
WCS CISF Service List

**C.I. 130.1**

001039

WCS CISF Service List

**Federal Officials**

The Honorable August Pfluger  
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Washington, D.C. 20515

The Honorable Ted Cruz  
United States Senate  
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WCS CISF Service List

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[edc@edclc.org](mailto:edc@edclc.org)



J. Isakson

3

SUBJECT: ISSUANCE OF MATERIALS LICENSE NO. SNM-2515 FOR THE  
 WCS CONSOLIDATED INTERIM STORAGE FACILITY INDEPENDENT SPENT  
 FUEL STORAGE INSTALLATION (DOCKET NO. 72-1050)

DOCUMENT DATE: September 13, 2021

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ADAMS Accession Nos.: ML21188A096 (Package) ML21188A097 \* via e-mail

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DATE	7/12/21	07/13/21	07/19/21	7/26/21
OFFICE	OGC	NMSS/DFM D		
NAME	ABell*	SHelton*		
DATE	8/4/21	8/12/21		

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# Tab 50

INTERIM STORAGE PARTNERS, LIMITED LIABILITY COMPANY  
DOCKET NO. 72-1050  
WCS CONSOLIDATED INTERIM STORAGE FACILITY  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
MATERIALS LICENSE NO. SNM-2515

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application filed by Interim Storage Partners, Limited Liability Company (the applicant), for a materials license to receive, store, transfer, and possess power reactor spent fuel, associated radioactive material, and greater-than-Class-C radioactive waste at the WCS Consolidated Interim Storage Facility (CISF) Independent Spent Fuel Storage Installation (ISFSI) in Andrews County, TX, meets the standards and requirements of the Atomic Energy Act of 1954, as amended (Act), and the Commission's regulations set forth in 10 CFR Chapter I, "Nuclear Regulatory Commission";
  - B. The WCS CISF ISFSI will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. The applicant's proposed ISFSI design complies with the criteria in 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste," Subpart F, "General Design Criteria";
  - D. The proposed site complies with the criteria in 10 CFR Part 72, Subpart E, "Siting Evaluation Factors";
  - E. The proposed ISFSI would not pose an undue risk to the safe operation of the WCS radioactive material disposal facilities;
  - F. The applicant is qualified by reason of training and experience to conduct the operations covered by the regulations in 10 CFR Part 72;
  - G. The applicant's operating procedures to protect health and to minimize danger to life and property are adequate;
  - H. The applicant is financially qualified to engage in the activities in accordance with the regulations in 10 CFR Part 72, subject to the conditions specified in the license;
  - I. The applicant's quality assurance plan complies with 10 CFR Part 72, Subpart G, "Quality Assurance";
  - J. The applicant's physical protection provisions comply with 10 CFR Part 72, Subpart H, "Physical Protection";
  - K. The applicant's personnel training program complies with 10 CFR Part 72, Subpart I, "Training and Certification of Personnel";

- L. The applicant's decommissioning plan and its financing pursuant to 10 CFR 72.30 provide reasonable assurance, subject to the conditions specified in the license, that the decontamination and decommissioning of the WCS CISF ISFSI at the end of its useful life will provide adequate protection to the health and safety of the public;
  - M. The applicant's emergency plan complies with 10 CFR 72.32;
  - N. The applicant has satisfied the applicable provisions of 10 CFR Part 170, "Fees for Facilities, Materials, Import and Export Licenses, and Other Regulatory Services Under the Atomic Energy Act of 1954, as Amended";
  - O. There is reasonable assurance that (i) the activities authorized by this license can be conducted without endangering public health and safety, and (ii) such activities will be conducted in compliance with the Commission's regulations;
  - P. The issuance of this license will not be inimical to the common defense and security; and
  - Q. The issuance of this license is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.
2. This license is effective as of the date of its issuance and shall expire at midnight on September 13, 2061.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

**Shana R.  
Helton**

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R. Helton  
Date: 2021.09.13 08:51:26  
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Shana R. Helton, Director  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: License SNM-2515

Date of Issuance: September 13, 2021

# Tab 51

## LICENSE FOR INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Part 72, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, and possess the power reactor spent fuel and other radioactive materials associated with spent fuel storage designated below; to use such material for the purpose(s) and at the place(s) designated below; and to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified herein.

This license is conditioned upon fulfilling the requirements of 10 CFR Part 72, as applicable, the attached Appendix A (Technical Specifications), and the conditions specified below.

Licensee

- |   |  |  |
|---|--|--|
| <p>1. Interim Storage Partners LLC (ISP)</p>  | <p>3. License No. SNM-2515<br/>Amendment No. 0</p>   |  |
| <p>2. WCS CISF<br/>9998 Highway 176 West<br/>Andrews, Texas, 79714</p>  | <p>4. Expiration Date September 13, 2061</p>   | <p>5. Docket or Reference No. 72-1050</p>  |
| <p>6. Byproduct, Source, and/or Special Nuclear Material</p> <p>A. Spent nuclear fuel elements from commercial nuclear utilities licensed pursuant to 10 CFR Part 50, including those stored under either a Part 50 general license or Part 72 specific license, and associated fuel assembly control components and associated radioactive materials related to the receipt, transfer, and storage of that spent nuclear fuel.</p> <p>B. Greater than Class C Waste, reactor related material generated as a result of plant operations and decommissioning where radionuclide concentration limits of Class C waste in 10 CFR 61.55 are exceeded.</p> | <p>7. Chemical and/or Physical Form</p> <p>A. Intact fuel assemblies, damaged fuel assemblies, failed fuel and fuel debris, as allowed by Materials License SNM-2510, Amendment 4; Table 1-1c or Table 1-1j of Certificate of Compliance No. 1004, Amendments 3 through 13; Table 1-1t of Certificate of Compliance No. 1004, Amendments 10 through 13; Section 2.1 of Certificate of Compliance No. 1029, Amendments 0, 1, and 3; Section B 2.1 of Certificate of Compliance No. 1025, Amendments 0 through 6; Section B 2.1.2 of Certificate of Compliance No. 1015, Amendments 0 through 5; Table B 2-1 of Certificate of Compliance No. 1031, Amendments 0 through 3 Revision 1, and 4 through 5, modified as described in Condition 9 below.</p> <p>B. Greater than Class C Waste, as activated and potentially surface contaminated metals comprised of miscellaneous solid waste resulting from segmentation and decommissioning processes.</p> | <p>8. Maximum Amount That Licensee May Possess at Any One Time Under This License</p> <p>A. 5,000 Metric Tons (MT) total of Uranium and Mixed-Oxide (MOX) in the form of intact spent fuel assemblies, damaged fuel assemblies, failed fuel assemblies, and fuel debris. In addition, the cumulative amount of material received and accepted during the licensed term of the facility may not exceed 5,000 MT of Uranium plus MOX.</p> <p>B. 231.3 MT (510,000 pounds) of Greater than Class C Waste.</p> |

NRC FORM 558  
(10-2000)  
10 CFR 72

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 2 of 3 PAGES

License No. Amendment No.

SNM-2515 0

Docket or Reference No.

72-1050

**LICENSE FOR INDEPENDENT STORAGE OF SPENT NUCLEAR  
FUEL AND HIGH-LEVEL RADIOACTIVE WASTE**

**SUPPLEMENTARY SHEET**

9. Authorized Use: The material identified in 6.A, 6.B, 7.A and 7.B above is authorized for receipt, possession, storage, and transfer at the WCS Consolidated Interim Storage Facility (WCS CISF), as described in the WCS CISF Final Safety Analysis Report (FSAR) as updated. Storage of fuel is authorized only in canisters referenced in Section 2.1 of the Attachment, Appendix A Technical Specifications and all fuel with assembly average burnup greater than 45 GWd/MTHM shall be canned inside the canister.
10. Authorized Place of Use: The licensed material is to be received, possessed, transferred, and stored at the WCS CISF, geographically located within Andrews County, Texas.
11. The Technical Specifications contained in the Appendix attached hereto are incorporated into the license. The Licensee shall operate the installation in accordance with the Technical Specifications in the Appendix.
12. The licensee shall follow WCS ERP-100, "Consolidated Emergency Response Plan," Revision 02-08-2019, and as it may be further revised in accordance with 10 CFR 72.44(f).
13. The Licensee shall:
- (1) follow the Physical Protection Plan entitled, "WCS Consolidated Interim Storage Facility (CISF) Physical Security Plan," Revision 5, dated September 18, 2019, as well as changes made in accordance with 10 CFR 72.44(e) and 72.186(b);
  - (2) follow the Training and Qualification Plan entitled, "WCS Consolidated Interim Storage Facility (CISF) Training and Qualification Plan Appendix B to the CISF Physical Security Plan," dated September 18, 2019, as well as changes made in accordance with 10 CFR 72.44(e) and 72.186(b);
  - (3) follow the Safeguards Contingency Plan entitled "WCS Consolidated Interim Storage Facility (CISF) Safeguards Contingency Plan Appendix C to the CISF Physical Security Plan," dated September 18, 2019, as well as changes made in accordance with 10 CFR 72.44(e) and 72.186(b);
  - (4) follow the "Additional Security Measures for the Physical Protection of Dry Independent Spent Fuel Storage Installations," dated September 28, 2007; and
  - (5) follow the "Additional Security Measures for Access Authorization and Fingerprinting at Independent Spent Fuel Storage Installations," dated December 19, 2007.
14. Construction of the WCS CISF shall not commence before funding (equity, revenue, and debt) is fully committed that is adequate to construct a facility with the initial capacity as specified by the Licensee to the NRC. Construction of any additional capacity beyond the initial capacity amount shall commence only after funding is fully committed that is adequate to construct such additional capacity.
15. The Licensee shall, in its contracts with clients:
- (1) include provisions requiring clients to retain title to the material identified in 6.A, 6.B, 7.A or 7.B, and include provisions allocating legal and financial liability among the Licensee and the client(s);
  - (2) include provisions requiring clients to periodically provide credit information, and, when necessary, additional financial assurances such as guarantees, prepayment, or payment bond(s);
  - (3) include a provision requiring the Licensee not to terminate the license prior to furnishing storage services covered by the contract.
16. The Licensee shall obtain onsite and offsite insurance coverage in the amounts committed to by ISP in the ISP license application.

C.I. 130.3

001049

NRC FORM 558  
(10-2000)  
10 CFR 72

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 3 of 3 PAGES

License No.	Amendment No.
SNM-2515	0

Docket or Reference No.
72-1050

**LICENSE FOR INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE**

**SUPPLEMENTARY SHEET**

17. To conform with the requirements of 10 CFR 72.42, the Licensee shall submit a request for license amendment(s) to incorporate any technically applicable provisions of the Aging Management Programs (AMPs) and Time-Limited Aging Analyses (TLAAs) approved in future renewals of NAC Systems CoCs 1015 and 1025 and 1031, for all applicable NAC spent fuel canisters and storage overpacks.

The Licensee shall submit the amendment request(s) within 120 days of the effective date of the applicable CoC approval. In the event that the current CoC holder for CoC 1015 and/or 1025 and/or 1031 does not submit a timely renewal as defined in 10 CFR Part 72.240, the Licensee shall submit a license amendment request, incorporating AMP and TLAA information compliant with 10 CFR 72.42, within one (1) year following the timely renewal deadline defined in 10 CFR 72.240(b) for the applicable CoC.

18. The Licensee shall submit a startup plan as described in Chapter 13 of the WCS CISF FSAR, as updated, to the NRC at least 90 days prior to receipt and storage of the material identified in 6.A, 6.B, 7.A or 7.B at the facility.

19. 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.

20. 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.

21. This license is effective as of the date of issuance shown below.

FOR THE NUCLEAR REGULATORY COMMISSION

**Shana R. Helton**

Digitally signed by  
Shana R. Helton  
Date: 2021.09.13  
08:52:35 -04'00'

Shana R. Helton, Director  
Division of Spent Fuel Management  
Office of Nuclear Material  
Safety and Safeguards

Date of Issuance September 13, 2021

Attachments: Appendix A –WCS Consolidated Interim Storage Facility Technical Specifications



# Tab 52

MATERIALS LICENSE No. SNM-2515

APPENDIX A

WCS CONSOLIDATED INTERIM STORAGE FACILITY TECHNICAL SPECIFICATIONS

Docket 72-1050

Amendment 0

**C.I. 130.4**

001052

## 2.0 FUNCTIONAL AND OPERATING LIMITS

### 2.1 Functional and Operating Limits

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Subject to the limitation of the last sentence of Condition 9 of this license SNM-2515, the used nuclear fuel to be stored in an HSM or VCC at the WCS CISF shall meet the Approved Contents requirements of one of the following:

- 2.1.1 NRC Materials License SNM-2510, Amendment 4.
  - 2.1.2 Table 1-1c or Table 1-1j (NUHOMS® 61BT DSC) of Certificate of Compliance 1004 Appendix A Technical Specifications For The Standardized NUHOMS® Horizontal Modular Storage System, including Amendments 3 through 13 inclusive.
  - 2.1.3 Table 1-1t (NUHOMS® 61BTH DSC) of Certificate of Compliance 1004 Appendix A Technical Specifications For The Standardized NUHOMS® Horizontal Modular Storage System, including Amendments 10 through 13 inclusive.
  - 2.1.4 Section 2.1 (NUHOMS® 24PT1) of Certificate of Compliance 1029 Appendix A Technical Specifications For The Standardized Advanced NUHOMS® System Operating Controls And Limits, including Amendments 0, 1, and 3.
  - 2.1.5 Section B 2.1 (NAC-MPC System) of Certificate of Compliance 1025 Appendix B Technical Specification For The NAC-MPC System Approved Contents and Design Features, including Amendments 0 through 6.
  - 2.1.6 Section B 2.1.2, "Maine Yankee SITE SPECIFIC FUEL Preferential Loading," (NAC-UMS System) of Certificate of Compliance 1015 Appendix B Technical Specification For The NAC-UMS System Approved Contents and Design Features, including Amendments 0 through 5.
  - 2.1.7 Table B.2-1, "PWR Fuel," (MAGNASTOR System) of Certificate of Compliance 1031 Appendix B Technical Specification For The MAGNASTOR System Approved Contents, including Amendments 0 through 3, Revision 1, and Amendments 4 and 5.
-

## 4.0 DESIGN FEATURES

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The specifications in this section include the design characteristics of special importance to each of the physical barriers and to the maintenance of safety margins in the WCS CISF design.

### 4.1 Site

The WCS CISF is located approximately 30 miles west of the City of Andrews, Texas, and five miles east of the City of Eunice, New Mexico. The WCS CISF is located approximately one-half mile east of the Texas-New Mexico boundary and approximately one mile north of Texas State Highway 176.

### 4.2 Storage System Features

#### 4.2.1 Storage Systems

The WCS CISF is licensed to store spent fuel and GTCC waste in various NUHOMS® System HSMs. Each CANISTER shall be loaded at a 10 CFR Part 50 licensee's facility in accordance with one of the following 10 CFR Part 72 Materials License or Certificates of Compliance (CoC):

- SNM-2510, or
- CoC No. 1004, or
- CoC No. 1029

and shipped to the WCS CISF in a 10 CFR Part 71 certified shipping package (the STC). The CANISTER shall be transferred directly from the STC to the HSM at the Storage Pad.

In addition, the WCS CISF is licensed to store spent fuel and GTCC waste in various NAC VCCs, which include VCCs for the NAC-MPC, NAC-UMS, and MAGNASTOR. Each CANISTER shall be loaded at a 10 CFR Part 50 licensee's facility in accordance with one of the following 10 CFR Part 72 Certificates of Compliance (CoC):

- CoC No. 1025, or
- CoC No. 1015, or
- CoC No. 1031

and shipped to the WCS CISF in a 10 CFR Part 71 certified TRANSPORTATION CASK. The CANISTER shall be transferred from the TRANSPORTATION CASK to the VCC with the CTS and the VCC and CANISTER will be transferred from the CTS to the Storage Pad with the VCT.

#### 4.2.2 Storage Capacity

The total storage capacity of the WCS CISF is limited to the material defined in Conditions 8A and 8B of the license. This total capacity of spent fuel assemblies is in the form of intact fuel assemblies, damaged fuel assemblies, failed fuel assemblies and fuel debris, as defined in SNM-2510; CoC No. 1004; CoC No. 1029, CoC No. 1025, CoC No. 1015, and CoC No. 1031.

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(continued)

**C.I. 130.4**

001054

# Tab 53

**From:** [Park, James](#)  
**To:** "Annemieke Tennis"  
**Cc:** [Monica Perales](#); [Allan Kanner](#)  
**Subject:** RE: Submittal of Comments re Interim Storage Partners LLC Environmental Impact Statement, Docket ID NRC-2016-0231  
**Date:** Thursday, September 23, 2021 3:09:00 PM

---

Dear Ms. Tennis:

Thank you for your letter of September 11, 2021, regarding the ISP Final Environmental Impact Statement (EIS). The NRC's regulations in 10 CFR Part 51 do not provide for a public comment period on a Final EIS. The NRC has placed your letter in its Agencywide Documents Access and Management System (ADAMS) at [ML21258A404](#) and it is publicly available.

The NRC has issued a materials license to ISP for the consolidated interim storage facility. It can be found in ADAMS at [ML21188A096](#).

Sincerely,

James Park, Project Manager  
U.S. Nuclear Regulatory Commission

---

**From:** Annemieke Tennis <a.tennis@kanner-law.com>

**Sent:** Saturday, September 11, 2021 11:57 AM

**To:** Park, James <James.Park@nrc.gov>; Schumann, Stacy <Stacy.Schumann@nrc.gov>; WCS\_CISFEIS Resource <WCS\_CISFEIS.Resource@nrc.gov>; EIS-Filing@epa.gov

**Cc:** Monica Perales <monicap@forl.com>; Allan Kanner <a.kanner@kanner-law.com>; Annemieke Tennis <a.tennis@kanner-law.com>

**Subject:** [External\_Sender] Submittal of Comments re Interim Storage Partners LLC Environmental Impact Statement, Docket ID NRC-2016-0231

Please find attached comments relating to the above-referenced matter for your review and consideration.

Don't hesitate to contact our office if you have any questions or need any additional information.

Thanks.

*Annemieke M. Tennis*

KANNER & WHITELEY, L.L.C.

701 Camp Street

New Orleans, LA 70130

(504) 524-5777

[a.tennis@kanner-law.com](mailto:a.tennis@kanner-law.com)

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# Tab 54



**FINAL SAFETY EVALUATION REPORT**

**FOR THE**

**WCS CONSOLIDATED INTERIM STORAGE FACILITY**

**INDEPENDENT SPENT FUEL STORAGE INSTALLATION**

**SPECIFIC MATERIALS LICENSE NO. SNM-2515**

**DOCKET NO. 72-1050**

**Office of Nuclear Material Safety and Safeguards**  
**United States Nuclear Regulatory Commission**

**September 2021**



## EXECUTIVE SUMMARY

By letter dated April 28, 2016, Waste Control Specialists LLC, submitted a license application to the U.S. Nuclear Regulatory Commission (NRC) to construct and operate a consolidated interim storage facility (CISF), which the applicant referred to as the WCS CISF, for spent nuclear fuel (SNF) and Greater-Than-Class C (GTCC) waste in Andrews County, Texas. The application specified a possession limit for spent nuclear fuel (SNF) of 5,000 metric tons total of uranium and mixed oxide, and a possession limit of 231.3 metric tons (510,000 pounds) for GTCC waste. The application requested a license term of 40 years.

On April 18, 2017, Waste Control Specialists LLC requested that the NRC temporarily suspend all safety and environmental review activities. On June 8, 2018, as supplemented on July 19, 2018, Interim Storage Partners LLC (ISP), a joint venture of Waste Control Specialists LLC and Orano CIS, LLC, (a subsidiary of Orano USA), requested that the NRC resume all safety and environmental review activities associated with the proposed WCS CISF.

The applicant prepared the application consistent with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste." The applicant also relied on information provided in Regulatory Guide (RG) 3.50, "Standard Format and Content for a Specific License Application for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Facility," to prepare a draft license." The application consists of the following documents:

1. A **License Application**, in which the applicant describes itself and provides some general and financial information, as required by 10 CFR 72.22;
2. A **Safety Analysis Report (SAR)**, in which the applicant describes its plans for designing, constructing, operating, maintaining, and decommissioning the proposed WCS CISF, as required by 10 CFR 72.24. The applicant prepared the SAR using Regulatory Guide 3.48, "Standard Format and Content for the Safety Analysis Report for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Installation (Dry Storage)," Revision 1, dated August 1989, and NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities, Final Report," dated March 2000, and the Interim Staff Guidance used by the Spent Fuel Project Office;
3. An **Emergency Plan**, in which the applicant describes its plan for resolving any emergencies that happen during the WCS CISF's operation, as required by 10 CFR 72.32;
4. An **Environmental Report**, in which the applicant provides information, as required by 10 CFR 72.34, that the staff uses for its environmental review, conducted in parallel with preparation of the staff's safety evaluation report (SER). The staff published a Draft Environmental Impact Statement (EIS) in May 2020 and issued a Final EIS in July 2021; and
5. A **Physical Security Plan**, in which the applicant describes its plans for ensuring that the WCS CISF and nuclear material are appropriately protected. This document contains nonpublic safeguards information. It includes the Security Training and Qualification Plan and Safeguards Contingency Plan, as required by 10 CFR 72.180 and

72.184. The staff performs this review in parallel with the safety evaluation and documents the review in a separate security evaluation.

This SER documents the staff's review and conclusions on the safety-related aspects of the license application. The staff conducted its technical review in accordance with the applicable NRC regulations in 10 CFR Part 20 "Standards for Protection Against Radiation" and Part 72. The staff reviewed the applicant's safety analysis report (SAR) following the guidance in NUREG-1567 (NRC 2000), applicable regulatory guides, and interim staff guidance.

Unless otherwise stated, this SER references information in SAR Revision 5, documents cited in or attached to the SAR, the applicant's responses to the staff's requests for additional information, and other relevant literatures.

As noted above, the license application requests to store SNF at the WCS CISF, an away-from-reactor independent spent fuel storage installation (ISFSI), for a license period of 40 years. At least 2 years before the end of this license term, the licensee may submit an application to renew the license. The proposed WCS CISF would provide an option for storing SNF from U.S. commercial nuclear power reactors. The WCS CISF would consist of dry cask storage systems stored on concrete pads, including up to 500 storage casks, onsite cask transporters, and transfer casks. The dry cask storage systems used at the proposed WCS CISF include the NUHOMS<sup>®</sup>-MP187 Cask System, Standardized Advanced NUHOMS System, Standardized NUHOMS System, NAC-MPC, NAC-UMS<sup>®</sup>, and NAC MAGNASTOR<sup>®</sup>. As discussed below, the NRC has previously issued certificates of compliance (CoCs) under 10 CFR Part 72, Subpart L, "Approval of Spent Fuel Storage Casks," for each of these systems except the NUHOMS MP187 Cask System, which the NRC previously licensed for use at the Rancho Seco ISFSI under 10 CFR Part 72, Subpart C, "Issuance and Conditions of License." As part of its application, ISP incorporated by reference final safety analysis reports corresponding to these six storage systems. The previously licensed systems include canisters that are suitable for both storage and transportation; however, the scope of this licensing action is limited to onsite SNF storage under 10 CFR Part 72. These systems provide structural protection and radiation shielding for canisters containing SNF and GTCC waste. The onsite handling of the cask systems would be accomplished using a cask handling building.

### **Description of the WCS CISF Site**

The applicant proposes to locate the WCS CISF 1.5 miles north of the entrance to the WCS CISF site at 9998 Highway 176 West, which is approximately 32 miles west of Andrews, Texas, and 6 miles east of Eunice, New Mexico. The WCS CISF would be located on 320 acres of land within 14,000 acres of land owned by WCS, a portion of which WCS currently uses for disposal of hazardous waste regulated under the Resource Conservation and Recovery Act, low-level radioactive waste, and byproduct waste. There are no nearby lake systems or flowing or intermittent streams. The WCS CISF will include rail sidetracks that depart from the existing WCS CISF site rail loop and extend north and to the west into the protected area (PA) and one of which goes through the cask handling building.

### **Description of the WCS CISF Storage Systems**

The dry cask storage systems used at the WCS CISF include the NUHOMS MP187 Cask System (SNM License 2510), the Standardized NUHOMS 61BT and 61BTH Type 1 Storage Systems (NRC CoC 72-1004), the Standardized Advanced NUHOMS Storage System (CoC 72-1029), the NAC-MPC Storage System (CoC 72-1025), the NAC-UMS Storage System (CoC 72-1015), and the MAGNASTOR Storage System (CoC 72-1031).

## **Safety of the WCS CISF**

The staff determined that the proposed WCS CISF and the proposed cask designs are structurally sound and that the SNF and GTCC waste will remain safe within the canister during all phases of operation for normal, off-normal, and accident conditions. The analyses included natural and human-made phenomena, including an in-depth study of potential seismic activity at the WCS CISF. After reviewing the applicant's analyses, the staff concluded that the WCS CISF and the proposed cask designs are structurally safe and will meet all applicable regulatory requirements.

The staff has also determined that the applicant has shown that the SNF within the storage casks will remain subcritical (i.e., unable to sustain a nuclear chain reaction) during all phases of operation for both normal conditions and credible accident conditions. The applicant has provided radiation dose estimates for the surrounding public and the workers at the proposed WCS CISF. The cask systems are welded closed to prevent leakage of radioactive material. Additional shielding is provided by transportation, transfer, and storage casks during handling and storage.

The applicant has estimated that members of the public nearest to the proposed WCS CISF would receive radiation doses below NRC regulatory requirements, which for normal conditions of operation is 0.25 mSv/yr (25 mrem/year) and for credible accidents is 0.05 Sv/year (5 rem/year). The applicant also calculated radiation dose rates within the vicinity of individual casks to demonstrate that workers at the WCS CISF will not receive doses that exceed 0.05 Sv/year (5 rem/year), the NRC annual regulatory limit for workers at nuclear facilities. These radiation dose limits have been established by NRC to prevent any undue risk and to ensure the safety of all members of the public and workers at a nuclear facility. The applicant also described its radiation protection program, which employs an as low as is reasonably achievable (ALARA) radiation protection principle. Radiation doses received by the workers and dose rates within the vicinity of the storage pad will be monitored to verify that radiation dose limits are not exceeded. The staff reviewed the analyses provided by the applicant and concluded that the WCS CISF and the proposed cask designs are radiologically safe and will meet regulatory requirements.

As required by 10 CFR Part 72, the applicant demonstrated that all systems, structures, and components (SSCs) of the proposed WCS CISF that are important to safety would continue to perform their design functions during normal and off-normal conditions and during any credible accidents that could be postulated to occur. Based on its review and evaluation of the information provided, the staff concluded that the applicant has provided acceptable analyses of the design and performance of these structures, systems, and components important to safety under normal, off-normal, and accident conditions.

The staff further concluded that the applicant's analyses related to off-normal and accident events demonstrate that the WCS CISF will be sited, designed, constructed, and operated so that during all credible off-normal and accident events, public health and safety will be adequately protected.

The NUHOMS and NAC systems were evaluated against the parameters and conditions specific to the site and the SNF to be stored. Based on its review, the staff finds that the use of the NUHOMS and NAC systems as proposed for the WCS CISF is acceptable in accordance with the site-specific license provisions of 10 CFR Part 72, subject to the conditions of the license.

## Other Requirements

To demonstrate its financial qualification, the applicant identified anticipated sources of funds for the WCS CISF. The NRC staff concludes that the applicant has provided reasonable assurance of its financial qualifications for construction, operation, and decommissioning of the WCS CISF.

The staff also found the applicant's emergency plan appropriately described WCS CISF's program for responding to onsite emergencies. It also described plans for seeking offsite assistance, if needed. Lastly, the staff found Revision 5 of the applicant's Physical Security Plan to be acceptable. However, the staff's security evaluation of the revised plan was transmitted as a separate safeguards document that is not available to the public.

## References

10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste."

10 CFR Part 20, "Standards for Protection Against Radiation."

AREVA Inc., "Updated Final Safety Analysis Report for the Standardized Advanced NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel," ANUH-01.0150, Revision 6, August 2014 (proprietary). Transmittal dated July 13, 2016. Agencywide Documents Access and Management System (ADAMS) Accession No. ML16200A178.

AREVA Inc., "Updated Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel," NUH-003, Revision 14, September 2014 (proprietary). Transmittal dated July 13, 2016. ADAMS Accession No. ML16218A396.

ISP, "Submittal of License Application Revision 2 and Request to Restart Review of Application for Approval of the WCS CISF, Docket 72-1050," June 8, 2018. ADAMS Accession No. ML18166A003.

ISP, "Supplement to Submittal of License Application Revision 2, and Request to Restart Review of Application for Approval of the WCS CISF," July 19, 2018. ADAMS Package Accession No. ML18206A595.

ISP, "License Application, Interim Storage Partners LLC," Revision 4, April 12, 2021. ADAMS Accession No. ML20237F470.

ISP, "Submission of Revision 5 of the Safety Analysis Report and Revision 4 of the License Application for the WCS CISF," Docket No. 72-1050, April 12, 2021. ADAMS Package Accession No. ML21105A766.

ISP, "WCS Consolidated Interim Spent Fuel Storage Facility Environmental Report," Revision 3, Docket No. 72-1050." ADAMS Accession No. ML20052E144.

ISP, "Revision 5 of the Physical Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan with Updated Cover Sheets, Docket 72-1050 CAC/EPID 001028/L-2017-NEW-0002," transmittal letter dated September 19, 2020. ADAMS Accession No. ML20269A259.

NRC, Regulatory Guide 3.48, "Standard Format and Content for the Safety Analysis Report for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Installation (Dry Storage)," Revision 1, August 1989. ADAMS Accession No. ML003739163.

NRC, Regulatory Guide 3.50, "Standard Format and Content for a License Application for An Independent Spent Fuel Storage Installation or a Monitored Retrievable Storage Facility," Revision 2, September 2014. ADAMS Accession No. ML14043A080.

NRC, NUREG-1567, "Standard Review Plan for Spent Fuel Dry Storage Facilities" March 2000. ADAMS Accession No. ML003686776.

NRC, NUREG-2239, "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," May 2020. ADAMS Accession No. ML20122A220.

NAC International, "NAC-MAGNASTOR Final Safety Analysis Report," Revision 7, July 2015 (proprietary). Transmittal August 3, 2016. ADAMS Accession No. ML16223A932.

NAC International, "NAC-MPC, NAC Multi-Purpose Cask, Final Safety Analysis Report," Revision 10, January 2014 (proprietary). Transmittal dated August 3, 2016. ADAMS Accession No. ML16223A556.

NAC International, "NAC-UMS Universal MPC System Final Safety Analysis Report for the UMS Universal Storage System," Revision 10, October 2012 (redacted). Transmittal dated August 3, 2016. ADAMS Accession No. ML16245A212.

Sacramento Municipal Utility District, "Rancho Seco Independent Spent Fuel Storage Installation, Final Safety Analysis Report, Volume 1, ISFSI System," Revision 4, June 2010 (proprietary). Transmittal dated August 11, 2016. ADAMS Accession No. ML16236A115.

WCS, "License Application to Construct and Operate a Consolidated Interim Storage Facility for Spent Nuclear Fuel in Andrews County, Texas, Docket 72-1050," April 28, 2016. ADAMS Package Accession No. ML16133A070.

WCS, "Request That NRC Temporarily Suspend All Safety & Environmental Review Activities As Well As Public Participation Activities Associated With WCS' License Application For Period Commencing On 04/18/2017 & Continuing Until Completion Of Sale Of WCS To Energy Solutions," April 18, 2017. ADAMS Accession No ML17110A206.

WCS, ERP-100, "Consolidated Emergency Response Plan," February 8, 2019. ADAMS Accession No. ML19156A045.

## 16 ACCIDENT ANALYSIS

In Chapter 12, “Accident Analysis,” of the safety analysis report (SAR), Interim Storage Partners LLC (the applicant) described its engineering analyses to qualify the storage and transportation systems received at the proposed WCS Consolidated Interim Storage Facility (CISF) for off-normal operating conditions and for a range of credible and hypothetical accident conditions. Consistent with the guidance in Regulatory Guide (RG) 3.48, “Standard Format and Content for the Safety Analysis Report for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Installation (Dry Storage),” Revision 1, issued August 1989, the applicant used the design events identified by the American National Standards Institute (ANSI) and the American Nuclear Society (ANS) in ANSI/ANS 57.9-1984, “Design Criteria for an Independent Spent Fuel Storage Installation (Dry Storage Type),” to form the basis for the accident analyses for the WCS CISF storage and transportation systems.

### 16.1 Scope of Review

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed and evaluated the accident analysis of the proposed facility discussed in Chapter 12 of Revision 5 of the SAR, dated April 12, 2021, documents cited in or attached to the SAR, and the applicant’s responses to the staff’s requests for additional and supplemental information. In SAR Section 1.1, “Introduction,” the applicant stated that the WCS CISF will store spent nuclear fuel (SNF) in cask systems that the NRC has previously approved. The applicant described its analysis of off-normal and accident conditions for the approved storage systems in SAR Chapter 12 and the cask design-specific appendices to the SAR. The applicant referenced the associated systems’ storage final safety analysis reports (FSARs) and transportation system SARs; these provide design-basis information about radiological hazards for the individual systems to be used at the WCS CISF.

### 16.2 Regulatory Requirements

The regulatory requirements relevant to accident analysis for the proposed WCS CISF appear in the following sections of Title 10 of the *Code of Federal Regulations* (10 CFR):

- 10 CFR 72.24, “Contents of application: Technical information”
- 10 CFR 72.90, “General considerations”
- 10 CFR 72.92, “Design basis external natural events”
- 10 CFR 72.94, “Design basis external man-induced events”
- 10 CFR 72.104, “Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS”
- 10 CFR 72.106, “Controlled area of an ISFSI or MRS”
- 10 CFR 72.122, “Overall requirements”
- 10 CFR 72.124, “Criteria for nuclear criticality safety”
- 10 CFR 72.126, “Criteria for radiological protection”
- 10 CFR 72.128, “Criteria for spent fuel, high-level radioactive waste, reactor-related Greater than Class C waste, and other radioactive waste storage and handling”

These requirements ensure that an applicant identifies and evaluates the hazards for off-normal and accident or design-basis events involving systems, structures, and components (SSCs) that are important to safety (ITS).

### 16.3 Staff Review and Analysis

The NRC staff evaluated the applicant's analysis of off-normal events and postulated accident events for the WCS CISF by reviewing the information in the SAR. The staff reviewed this information to establish whether the WCS CISF system designs satisfy the applicable operational and safety requirements.

The applicant stated that the FSARs for the referenced storage systems identify design-basis events that are classified as either normal, off-normal, or accidents for each approved system. The applicant described normal, off-normal, and accident conditions in SAR Section 1.4.3.2, "Safety Analysis Methodology," as follows:

- Normal events include such operations as transportation package receipt, inspection, transfer of the canisters to the storage overpack, and storage at the WCS CISF until ready to be transported off site.
- Off-normal events are those events that are expected to occur with moderate frequency during transfer and storage operations.
- Accident conditions are those events that occur infrequently and could reasonably be expected to occur during the lifetime of the WCS CISF. These events include low-probability design-basis accidents, which establish a conservative design basis for ITS SSCs. These events include natural phenomena such as earthquakes and tornadoes, and human-made events such as cask drop.

#### 16.3.1 Off-Normal Events

In SAR Section 12.1, "Off-Normal Events," the applicant provided information about off-normal events for the NUHOMS® and NAC storage systems.

##### 16.3.1.1 NUHOMS Systems

For the NUHOMS systems to be used at the WCS CISF, the applicant stated that off-normal events could occur during cask handling, transfer vehicle moving, canister transfer, and other operational events. The applicant stated that two off-normal events bound the range of off-normal conditions: (1) a jammed canister during loading or unloading from the horizontal storage module (HSM), and (2) the extreme ambient temperatures in SAR Table 1-2, "Summary of WCS CISF Principal Design Criteria." The applicant stated that these events envelop the range of expected off-normal structural loads and temperatures acting on the canister, transfer cask, and HSM. For the NUHOMS systems, the applicant stated that it considered the following to be off-normal conditions:

- off-normal transfer loads
- extreme temperatures
- postulated release of radionuclides

In SAR Appendices A through D, Sections A.12.1, B.12.1, C.12.1, and D12.1, each entitled, "Off-Normal Operations," respectively, the applicant discussed the postulated causes and analyses of effects and consequences for off-normal conditions for the NUHOMS systems that the applicant plans to use at the WCS CISF. The applicant's discussions identified the FSAR

for each corresponding storage system that the applicant incorporated by reference in SAR Section 1.6.

For the off-normal transfer loads condition for the NUHOMS systems, the applicant referenced specific sections of the FSAR for each NUHOMS system for the causes of, detection of, evaluation of, and corrective actions for this condition.

For the extreme temperature off-normal condition for the NUHOMS systems, the applicant referenced specific sections of the FSAR for each NUHOMS system for the causes of, detection of, evaluation of, and corrective actions for this condition. In SAR Appendices A through D, Sections A.8.4, B.8.4, C.8.4, and D.8.4, respectively, the applicant referenced analyses that concluded that the WCS CISF extreme temperature conditions were enveloped by the conditions analyzed in the system-specific FSARs incorporated by reference.

For the postulated release of radionuclides off-normal condition, the applicant stated in SAR Section 11.1 that, except for the NUHOMS-MP187 fuel only-, fuel/control component-, and "failed" fuel-dry shielded canisters (DSCs), all of the canisters to be stored at the WCS CISF are designed to be leak tight under all normal, off-normal, and accident conditions. Additionally, the applicant's proposed Technical Specification 2.1, "Functional and Operating Limits," limits the canisters received at the WCS CISF to those that were loaded and stored in accordance with the listed Site Specific and General Licenses that correspond to the FSARs incorporated by reference into the SAR. Therefore, the confinement of the SNF or GTCC waste is maintained under all conditions.

For the NUHOMS-MP187 system, the applicant provided an analysis in SAR Section A.11 showing that, using a conservative assumption of 10-percent failed fuel, calculated doses at the facility boundary were less than 1 percent of the applicable regulatory limits in 10 CFR 72.104(a). SAR Table A.11-8 presents the results of the applicant's analysis. The staff's review of this analysis appears in SER Section 9.3.2.2. For the NUHOMS Standardized Advanced, Standardized 61BT, and 61BTH Type 1 systems, the applicant stated that the canisters are designed, fabricated, and tested to be leak-tight; therefore, there is no possibility for release of radionuclides from the canister under normal, off-normal, and accident conditions.

The staff found the applicant's evaluation of the off-normal conditions involving the NUHOMS systems acceptable because the applicant relied on analyses previously accepted by the NRC for these systems, and those analyses apply to or bound the off-normal conditions of the WCS CISF. Specifically, the staff found that the off-normal transfer loads condition and the postulated release of radionuclides off-normal condition apply to the WCS CISF and the applicant incorporated by reference the FSARs that previously analyzed those conditions. Additionally, for the extreme temperature off-normal condition, the staff found that the site-specific off-normal extreme temperatures are enveloped by the conditions analyzed in the system-specific FSARs incorporated by reference.

### **16.3.1.2 NAC Systems**

For the NAC-MPC System and NAC-UMS Storage System, the applicant stated in SAR Appendices E and F, Sections E.12.1.1, E.12.2.1, and F.12.1.1, that it considered the off-normal conditions at the WCS CISF to include the following:

- blockage of half the storage cask air inlets
- canister off-normal handling load
- failure of instrumentation



- severe environmental conditions (shown in SAR Table 1-2)
- small release of radioactive particulate from the canister exterior

For the NAC MAGNASTOR® storage system, the applicant stated in SAR Appendix G, Section G.12.1.1, that it considered the off-normal conditions listed above and the following additional off-normal conditions at the WCS CISF:

- crane failure during loaded transfer cask movements
- crane/hoist failure during transfer of a transportable storage canister (TSC) to a vertical concrete cask (VCC)

In SAR Appendices E, F, and G, Sections E.12.1.1, E.12.2.1, F.12.1.1, and G.12.1.1, the applicant identified the FSAR of each corresponding storage system that the applicant incorporated by reference in SAR Section 1.6, including all NAC systems that the applicant plans to use at the WCS CISF, and the FSAR's discussion of the postulated causes and analyses of effects and consequences for off-normal conditions.

For the Yankee Rowe and Connecticut Yankee configurations of the NAC-MPC System, SAR Section E.12.1.1 references Sections 11.1.1 through 11.1.5 of the NAC-MPC FSAR, incorporated by reference, to address the five off-normal conditions indicated above. For the La Crosse configuration of the NAC-MPC System (NAC-LACBWR), SAR Section E.12.2.1 references NAC-MPC FSAR Sections 11.A.1.1 through 11.A.1.5, which the applicant incorporated by reference to address the five off-normal conditions indicated above. The conditions discussed in the referenced FSAR apply to the WCS CISF, including the severe environmental conditions. SAR Table E.3-1, "Summary of WCS CISF Principal Design Criteria," compares the off-normal temperature conditions analyzed in the FSAR and incorporated by reference with the off-normal temperature conditions of the WCS CISF and shows that the previously analyzed temperature conditions bound the off-normal conditions of the WCS CISF.

For the NAC-UMS Storage System, SAR Section F.12.1.1 references Sections 11.1.1 through 11.1.5 of the NAC-UMS FSAR, which the applicant incorporated by reference to address the five off-normal conditions indicated above as they apply to Maine Yankee SNF stored in the NAC-UMS system. The conditions discussed in the referenced FSAR apply to the WCS CISF, including the severe environmental conditions. SAR Table F.3-1, "Summary of WCS CISF Principal Design Criteria," compares the off-normal temperature conditions analyzed in the NAC-UMS FSAR that is incorporated by reference with the off-normal temperature conditions of the WCS CISF and shows that the previously analyzed temperature conditions bound the off-normal conditions of the WCS CISF.

For the NAC MAGNASTOR storage system, SAR Appendix G, Section G.12.1.1, references Sections 12.1.1 through 12.1.7 of the NAC MAGNASTOR FSAR, which the applicant incorporated by reference to address the seven off-normal conditions indicated above. The conditions discussed in the referenced FSAR apply to the WCS CISF, including the severe environmental conditions. Table G.3-1, "Summary of WCS CISF Principal Design Criteria," compares the off-normal temperature conditions analyzed in the NAC MAGNASTOR FSAR that is incorporated by reference with the off-normal conditions of the WCS CISF and shows that the previously analyzed temperature conditions bound the off-normal conditions of the WCS CISF.

The staff found the applicant's evaluation of off-normal conditions involving the NAC systems acceptable because the applicant relied on analyses previously accepted by the NRC for these

systems, the applicant incorporated by reference those analyses, and those analyses apply to or bound the off-normal conditions of the WCS CISF.

#### **16.3.1.3 Greater-than-Class C Waste Canisters**

The applicant discussed off-normal operations for greater-than-Class C (GTCC) waste canisters in SAR Appendix H, Section H.8.1, "Normal and Off-Normal Operations." The applicant stated that GTCC waste canisters are comparable to SNF canisters in the thickness of canister shells and cover plates, the material chemical and physical properties, and the thickness of canister shell welds. The applicant stated that the GTCC waste canisters have insignificant heat load, with internal pressures not significantly greater than backfill pressures. Therefore, the material temperatures are only slightly greater than ambient, the temperature variations at any point in the shells are approximately equal to the variation in ambient temperature, and these small temperature cycles do not result in damage to or failure of the various GTCC waste canister shell assemblies. The staff found the applicant's evaluation of off-normal conditions for the GTCC waste canisters acceptable because the off-normal conditions for the canisters containing SNF envelop the corresponding conditions for the GTCC waste canisters. .

#### **16.3.1.4 Off-Normal Events Summary**

For the reasons stated above, the applicant's identification and assessment of off-normal events meets the requirements of 10 CFR 72.122 to protect public health and safety, 10 CFR 72.124 to maintain SNF in a subcritical condition, 10 CFR 72.126 for radiological protection, and 10 CFR 72.128 for SNF and GTCC waste handling, storage, and retrievability.

#### **16.3.2 Accidents**

The applicant stated in SAR Section 12.2, "Accidents," that the following postulated accident conditions are addressed, as applicable to each system in the WCS CISF SAR appendices:

- adiabatic heatup/blockage of air inlets/outlets (also see SAR Section 12.2.3, "Adiabatic Heat Up/Blockage of Air Inlets/Outlets")
- drop accidents
- earthquakes
- lightning
- fire/explosion
- flood
- tornado wind and missiles
- tip-over/overtipping (NAC vertical systems)

The applicant provided details of the accident analyses in SAR Appendices A through G, in Section 12, "Accident Analysis," of each appendix for the SNF storage systems and Section H.8, "Analysis of Design," of SAR Appendix H for the GTCC systems. For each SNF storage system FSAR incorporated by reference, the applicant compared the WCS CISF design criteria to the storage system design criteria in SAR Appendices A through G, Tables A.3-1, B.3-1, C.3-1, D.3-1, E.3-1, F.3-1, and G.3-1, each titled, "Summary of WCS CISF Principal Design Criteria." In SAR Section H.3, the applicant clarified that (1) the structural design criteria for the GTCC storage systems proposed for use at the WCS CISF are the same as the structural design criteria used for the storage systems listed in WCS CISF SAR Table 1-1, "Storage Systems at the WCS CISF," and (2) the results of the accident analyses for the

storage systems, which include drop accidents, floods, lightning, tornadoes and wind missiles, and tip-over, bound the results for the same accidents involving the GTCC storage systems.

For the NAC SNF storage systems, the applicant provided tip-over analyses for these systems in SAR Appendices E, F, and G, Sections E.12.1.3, E.12.2.3, F.12.1.3 and G.12.1.3, "Concrete Cask Non-Mechanistic Tip-Over Analysis."

#### **16.3.2.1 Cask Tip-Over**

The applicant considered tip-over of the NAC concrete casks a non-mechanistic, hypothetical accident condition. The applicant stated that existing postulated design-basis accidents do not result in the tip-over of the concrete casks. For each NAC cask system, the applicant referenced a bounding cask evaluation appearing in the corresponding NRC-approved FSAR for the cask system in order to demonstrate that the storage cask system does not suffer significant adverse consequences due to this event because the concrete cask, TSC, and basket maintain design-basis shielding, geometry control of contents, and content confinement performance requirements. The applicant incorporated by reference these FSARs.

In SAR Appendices E, F, and G, Sections E.12.1.3, E.12.2.3, F.12.1.3 and G.12.1.3, the applicant described site-specific tip-over analyses of the Yankee MPC and Connecticut Yankee MPC configurations of the NAC-MPC System, and the NAC-LACBWR, NAC-UMS, and MAGNASTOR cask systems, respectively, considering the WCS CISF site-specific soil properties and concrete pads and relevant design attributes of individual casks. The objective of those tip-over analyses was to confirm that the maximum amplified accelerations of the top of the basket and the canister for the five systems at the WCS CISF are bounded by the accelerations used in the structural evaluations of the five systems as original licensing bases.

The staff evaluated the applicant's site-specific tip-over analyses for the five systems in Sections 5.3.1.4.4 through 5.3.1.4.6 of this SER. The staff noted that the applicant used an LS-DYNA finite element analysis to perform tip-over analysis by following the common modeling approach in the individual FSARs for the design-basis analysis, with the exception that the cask- and site-specific pad design features and soil properties are taken into account. For the five systems analyzed, the applicant noted that the design-basis accelerations used in qualifying the basket and canister evaluations in the individual FSARs bound those for the casks deployed at the WCS CISF site. The staff verified the applicant's evaluation. The staff finds the applicant's assessment acceptable that (1) the previous analyses of canister and basket evaluations are bounding and (2) no further cask tip-over evaluations are required for the WCS CISF.

#### **16.3.2.2 Cask Drop**

The application incorporates by reference the following NRC-approved SNF storage cask system FSARs: NUHOMS-MP187 System discussed in the Rancho Seco ISFSI FSAR, Standardized Advanced NUHOMS Storage System, Standardized NUHOMS Storage System, NAC-MPC System, NAC-UMS Storage System, and NAC MAGNASTOR storage system. The respective FSARs for each system addressed the cask-drop accident.

In SAR Appendix A, Section A.12.2, "Postulated Accident," the applicant discussed an accident analysis of the NUHOMS MP187 cask in the transfer configuration. The applicant incorporated by reference the evaluation of the structural, thermal, and radiological consequences and the recovery measures required to mitigate the effects of a drop accident which appear in

Section 8.2.1.3, "Analysis of Effects and Consequences," of Volume I of the Rancho Seco independent spent fuel storage installation (ISFSI) FSAR.

In SAR Appendix B, Section B.12.2, "Postulated Accident," the applicant discussed an accident analysis of the NUHOMS-MP187 cask in the 24PT1 DSC transfer configuration as described in the Standardized Advanced NUHOMS Storage System FSAR, which the applicant incorporated by reference. For the identical NUHOMS-MP187 cask also using the Standardized Advanced NUHOMS Storage System, the accident analysis referenced Section 8.2.1.3 "Analysis of Effects and Consequences," of Volume I of the Rancho Seco ISFSI FSAR.

In SAR Appendix C, Section C.12.2, "Postulated Accident," the applicant discussed an accident analysis of the MP197HB cask in the transfer configuration, referencing the structural and thermal consequences for the effect of a drop accident addressed in Section K.11.2.5.2, "Accident Analysis," of the Standardized NUHOMS Storage System FSAR for the canister and in SAR Appendix C, Section C.8, "Thermal Evaluation." This analysis, which the applicant incorporated by reference, demonstrates that the canister remains leak tight and the basket maintains its configuration following the drop event.

In SAR Appendix D, Section D.12.2, "Postulated Accident," the applicant discussed an accident analysis of the MP197HB cask in the transfer configuration for the structural thermal consequences for the effects of a drop accident addressed in Section T.11.2.5.2, "Accident Analysis," of the Standardized NUHOMS Storage System FSAR for the canister and in SAR Appendix D, Section D.8, "Thermal Evaluation," for the NUHOMS-MP197HB cask. This analysis, which the applicant incorporated by reference, demonstrates that the canister remains leak tight and the basket maintains its configuration following the drop event.

In SAR Appendix E, Section E.12.1.2, "Accidents," and Section E.12.2.2, "Accidents," the applicant discussed an accident analysis of the NAC-MPC and NAC-LACBWR casks in the transfer configuration. The applicant incorporated by reference the structural consequences evaluated in Sections 11.2.11 and 11.A.2.11, both entitled, "Storage Cask 6-Inch Drop," of the NAC-MPC FSAR, which demonstrate adequate structural performance of the cask undergoing a 6-inch cask drop accident for the NAC-MPC and NAC-LACBWR cask systems, respectively.

In SAR Appendix F, Section F.12.1.2, "Accidents," the applicant discussed an accident analysis of the NAC-UMS cask in the transfer configuration. The applicant incorporated by reference the structural consequences evaluated in Section 11.2.4, "24-Inch Drop of Vertical Concrete Cask," of the NAC-UMS FSAR, which demonstrate adequate structural performance of the vertical concrete cask undergoing a 24-inch cask drop accident for the NAC-UMS cask systems.

In SAR Appendix G, Section G.12.1.2, "Accidents and Natural Phenomena," the applicant discussed an accident analysis of the NAC MAGNASTOR cask in the transfer configuration. The applicant referred to the structural consequences evaluated in Section 12.2.4, "24-Inch Drop of the Concrete Cask," of the NAC MAGNASTOR FSAR, which the applicant incorporated by reference and which demonstrates adequate structural performance of the concrete cask undergoing a 24-inch cask drop accident for the NAC MAGNASTOR storage system.

The staff reviewed and verified the information incorporated by reference, discussed above, and determined that it was properly evaluated and is applicable to the WCS CISF. As a result, the staff has reasonable assurance to conclude that cask components are structurally adequate for the postulated cask-drop accidents.

### **16.3.2.3 Flood**

The staff reviewed and evaluated the potential for events due to flooding in SER Section 2.3.4, "Surface Hydrology."

In SAR Section 2.4.2.2, "Flood Design Considerations," and Section 3.2.2, "Water Level (Flood) Design," the applicant noted that the WCS CISF is not in a floodplain and is above the probable maximum flood elevation. Because the cask systems deployed on the concrete pads will remain dry in the event of a flood, the staff finds the applicant's assessment acceptable that no further flood analysis is required of the cask systems.

### **16.3.2.4 Fire and Explosions**

The application incorporated by reference the following NRC-approved SNF storage cask system FSARs: NUHOMS-MP187 Cask System discussed in the Rancho Seco ISFSI FSAR, Standardized Advanced NUHOMS Storage System, Standardized NUHOMS Storage System, NAC-MPC System, NAC-UMS Storage System, and NAC MAGNASTOR storage system. The respective FSARs for each system address a fire accident. The previous evaluations of each system concerning a fire accident continue to be acceptable because the site limits the amount of combustible materials to the amounts described in the respective FSARs incorporated by reference and therefore the analyzed fires in these FSARs bound the site. A fire event is postulated to occur for the canister transfer system which has not been analyzed in the FSARs, as described below.

SAR Section 12.2.1, "Canister Transfer System Fire Accident," described the analysis of a fire event assuming 50 gallons of flammable liquid, which is the only flammable material in the vicinity of the canister transfer system during transfer operations. This event is specific to the WCS CISF site because the transfer casks are located inside a building and have not been considered previously in the FSARs for the respective systems incorporated by reference. The applicant's analysis results showed that none of the allowable temperature limits are exceeded.

In SAR Section 3.3.6, "Fire and Explosion Protection," the applicant stated that WCS CISF-initiated explosions are not considered credible because no explosive materials are present. The applicant also stated that the effects of externally initiated explosions are bounded by the design-basis tornado-generated missile load analysis performed for the authorized storage systems.

Based on its review, the staff finds that the applicant's analysis for fire and explosions is acceptable because the analyses incorporated by reference bound the design criteria of the site, except for the postulated fire inside the cask handling building which was analyzed in the SAR, and the allowable temperature limits are not exceeded for a fire in the canister transfer system.

### **16.3.2.5 Lightning**

The application incorporated by reference the following NRC-approved SNF storage cask system FSARs: NUHOMS-MP187 System discussed in the Rancho Seco ISFSI FSAR, Standardized Advanced NUHOMS Storage System, Standardized NUHOMS Storage System, NAC-MPC System, NAC-UMS Storage System, and NAC MAGNASTOR storage system. Because the respective FSARs for each system address a lightning accident and the previous evaluations continue to be acceptable, the staff finds that further evaluation is not required.

### 16.3.2.6 Earthquakes

In SAR Section 2.6.2, "Vibratory Ground Motion," the applicant evaluated site-specific vibratory ground motion and selected the ground-surface uniform hazard response spectra with  $1 \times 10^{-4}$  annual frequency of exceedance having a peak ground acceleration of 0.250g horizontal and 0.175g vertical. The site-specific response spectra shown in SAR Table 1-5, "Ground Surface DRS," and Figure 1-5, "10,000-Year Return Period Response Spectra (5% Damped)," are used in the soil-structure interaction (SSI) analyses in SAR Section 7.6.1, "Storage Pads for VCCs," and Section 7.6.5, "NUHOMS NITS Storage Pad Design," to obtain the enveloped acceleration spectra at the center of gravity and at the base of the NAC vertical concrete casks and NUHOMS HSM, respectively.

In SER Section 5.3.4.3, "NUHOMS Horizontal Storage Module Storage Pad," the staff evaluated the applicant's SSI analysis of the NUHOMS HSM storage pad. The staff finds that the resulting enveloping response spectra presented in SAR Appendices A through D, Sections A.7.5, B.7.5, C.7.3, and D.7.3, respectively, demonstrate that the enveloping WCS CISF site-specific seismic forces remain below their applicable capacities for the structural components of the NUHOMS-MP187 cask with the Rancho Seco DSCs, the NUHOMS-MP187 cask and Standardized Advanced NUHOMS System, the MP197HB cask and Standardized NUHOMS with the 61BT DSC, and the MP197HB cask and Standardized NUHOMS with the 61BTH Type 1 DSC, respectively.

In SAR Appendix A, Section A.12.2.3, "Earthquakes," the applicant refers to SAR Section A.7.5, "Seismic Reconciliation of the MP187 Cask, Canisters, and HSM Model 80," for a discussion of how the site-specific response spectra were used to obtain the enveloped acceleration spectra at the HSM center of gravity (CG) and base. In Section A.7.5, the applicant presents a seismic reconciliation evaluation between the site-specific seismic forces and the capacities of the NUHOMS-MP187 Cask System components to demonstrate structural performance. The staff reviewed this seismic reconciliation in SER Section 5.3.1.4.1. The applicant incorporated by reference the structural, thermal, and radiological consequences and the recovery measures required to mitigate an earthquake addressed in relevant sections of Volume II and Volume III of the Rancho Seco ISFSI FSAR.

In SAR Appendix B, Section B.12.2.3, "Earthquakes," the applicant refers to SAR Section B.7.5, "Seismic Reconciliation of the Advanced NUHOMS 24PT1 DSC and AHSM Storage Components and the MP187 Transfer Cask," for a discussion of how the site-specific response spectra were used to obtain the enveloped acceleration spectra at the advanced HSM (AHSM) CG and base. In Section B.7.5, the applicant presents a seismic reconciliation between the site-specific seismic forces and the capacities of the NUHOMS-MP187 cask and Standardized Advanced NUHOMS System components to demonstrate structural performance. The staff reviewed this seismic reconciliation in SER Section 5.3.1.4.2. The applicant discussed the design-basis earthquake analysis of the NUHOMS-MP187 System and Standardized Advanced NUHOMS Storage System by noting that the structural and thermal consequences of an earthquake are addressed in Section 11.2.1.2, "Accident Analysis," of the Standardized Advanced NUHOMS Storage System FSAR, which the applicant incorporated by reference. The applicant stated that the NUHOMS-MP187 cask, when mounted on the transfer vehicle during an earthquake, is subjected to stresses that are bounded by the 80-inch cask-drop analysis.

In SAR Appendix C, Section C.12.2.3, "Earthquakes," the applicant refers to SAR Section C.7.3, "Seismic Reconciliation of the 61BT DSC, HSM Model 102, and MP197HB Cask," for a

discussion of how the site-specific response spectra were used to obtain the enveloped acceleration spectra at the HSM CG and base. In Section C.7.3, the applicant presents a seismic reconciliation between the site-specific seismic forces and the capacities of the MP197HB cask and Standardized NUHOMS System components to demonstrate structural performance. The staff reviewed this seismic reconciliation in SER Section 5.3.1.4.3. The applicant discussed the design-basis earthquake analysis of the NUHOMS-MP197HB cask and Standardized NUHOMS system with the 61BT DSC by noting that the structural and thermal consequences of an earthquake are addressed in Sections K.11.2.2.2, 8.2.3.2, and K.3.7 of the Standardized NUHOMS Storage System FSAR, which the applicant incorporated by reference. The applicant noted that SAR Appendix C.7 evaluates the NUHOMS-MP197HB cask when mounted on the transfer vehicle during an earthquake.

In SAR Appendix D, Section D.12.2.3, "Earthquakes," the applicant refers to SAR Section D.7.3, "Seismic Reconciliation of the 61BT DSC, HSM Model 102, and MP197HB Cask," for a discussion of how the site-specific response spectra were used to obtain the enveloped acceleration spectra at the HSM CG and base. The applicant further discussed a seismic reconciliation between the site-specific seismic forces and the capacities of the MP197HB cask and Standardized NUHOMS System components to demonstrate structural performance. The staff reviewed this seismic reconciliation in SER Section 5.3.1.4.3. The applicant discussed the design-basis earthquake analysis of the NUHOMS-MP197HB cask and Standardized NUHOMS system with the 61BTH Type 1 DSC by noting that the structural and thermal consequences of an earthquake are addressed in Sections T.11.2.2.2, 8.2.3.2, and T.3.7.2 of the Standardized NUHOMS Storage System FSAR, which the applicant incorporated by reference. SAR Appendix D.7, "Structural Evaluation," evaluates the NUHOMS-MP197HB cask when mounted on the transfer vehicle during an earthquake.

In SER Section 5.3.2.5, the staff evaluated the applicant's SSI analysis of the NAC VCC storage pad and finds that the resulting enveloping response spectra in SAR Section 7.6.1 demonstrate that the enveloping WCS CISF site-specific seismic forces remain below their applicable capacities for the structural components of the NAC-MPC, NAC-LACBWR, NAC-UMS, and NAC MAGNASTOR cask systems. The applicant used the bounding MAGNASTOR storage cask for the sliding and overturning calculation.

In SAR Sections E.12.1.2, E.12.2.2, F.12.1.2, and G.12.1.2, each titled, "Accidents," the applicant discussed the design-basis earthquake analysis of the NAC-MPC, NAC-UMS and NAC MAGNASTOR cask systems. Those sections further reference the structural consequences evaluated in each cask system's FSAR, each titled, "Earthquake Events." The staff verified the respective sections of the referenced FSARs and finds that the analyses discussed in those FSAR sections continue to remain valid for the WCS site because the designs remain similar and the FSAR sections are incorporated by reference. In addition, the seismic performance of the NAC cask systems is further discussed in SAR Section 7.6.3 where the applicant analyzed the structural performance of each cask system under site-specific conditions. The staff discusses and finds the seismic analyses acceptable in SER Section 5.3.2.5.

In summary, the staff reviewed and verified the information incorporated by reference, discussed above, and determined that it was properly evaluated. The staff's review of the seismic reconciliation for the aforementioned casks, as applicable, is further discussed in SER Sections 5.3.1 and 5.3.2. As a result, the staff has reasonable assurance to conclude that storage casks and cask components will remain structurally adequate during the design-basis earthquake events at the WCS CISF site.

### **16.3.2.7 Loss of Shielding**

Chapter 12 of the SAR discusses the dose consequences for the identified design-basis accidents and natural phenomena events. Additionally, the FSARs for the following facilities and systems incorporated by reference consider the dose consequences of design-basis accidents and natural phenomena events: Rancho Seco ISFSI, Standardized Advanced NUHOMS Storage System, Standardized NUHOMS Storage System, NAC-MPC System, NAC-UMS Storage System, and NAC MAGNASTOR storage system. The applicant determined in Chapter 12.2 of the SAR that the confinement system is not adversely affected during a design-basis accident and that no design-basis accident would significantly degrade the shielding capability of the storage cask or the cask handling building (CHB). Based on its review, the staff finds that there is reasonable assurance that the dose to any individual beyond the owner-controlled area will not exceed the limits in 10 CFR 72.106(b) and that occupational exposures from accident recovery will not exceed the limits in 10 CFR Part 20, "Standards for protection against radiation," because (1) the analyses incorporated by reference bound the design criteria of the proposed site and (2) the staff's detailed analysis in SER Chapter 7 supports the applicant's analysis.

### **16.3.2.8 Adiabatic Heatup**

The applicant stated in SAR Section 12.2.3, "Adiabatic Heat Up/Blockage of Air Inlets/Outlets," that no credible accident scenarios at the WCS CISF site would result in a full adiabatic condition for the storage systems (e.g., entombment of the storage overpacks from volcanic or seismic activity, landslides). The applicant stated in SAR Section 12.2.3 that the accident evaluated in each Section 12 of the SAR Appendices (e.g., SAR Sections A.12, B.12) for each system that considers adiabatic heatup is the "Blockage of Air Inlets/Outlets." The application incorporated by reference the NRC-approved SNF storage cask system and facility FSARs for the Rancho Seco ISFSI, Standardized Advanced NUHOMS Storage System, Standardized NUHOMS Storage System, NAC-MPC System, NAC-UMS Storage System, and NAC MAGNASTOR storage system. The respective FSARs for each system address blocked air inlet/outlet vents. Because the NRC previously evaluated these systems and the previous evaluations continue to be acceptable, the staff finds that further evaluation is not required.

### **16.3.2.9 Tornadoes and Missiles Generated by Natural Phenomena**

In SAR Section 3.2.1, "Tornado and Wind Loadings," the applicant stated that the cask storage systems are designed to withstand the loads resulting from tornado and extreme wind. The design-basis tornado is from Region II, as defined by RG 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants." SAR Table 1-2 lists the design-basis tornado characteristics for Region II. Tornado missile load conditions are based on the design-basis tornado addressed in SAR Section 3.2.1.1, "Applicable Design Parameters," and are listed in SAR Table 1-2. The loaded storage overpacks are designed to remain stable and to maintain the confinement boundary when subjected to tornado-generated missiles.

In SAR Appendix A, Section A.3.3.1, "Tornado Wind and Tornado Missiles," the applicant discussed a tornado wind and tornado missiles analysis for the NUHOMS-MP187 cask system, from Section 3.2.1, "Tornado and Wind Loadings," of Volume 1 of the Rancho Seco ISFSI FSAR, which the applicant incorporated by reference. The applicant stated that the NUHOMS-MP187 System components are designed and conservatively evaluated for the most severe tornadoes and missiles anywhere within the United States (Region I as defined in NRC



RG 1.76), while the WCS CISF is in Region II, a location with less severe tornadoes and tornado missiles.

The NUHOMS HSM protects the DSC from adverse environmental effects and is the principal structure exposed to tornado wind and missile loads. The applicant stated that all components of the HSM (regardless of their safety classification) are designed to withstand tornadoes and tornado-based missiles. The applicant further stated that the MP187 cask protects the DSC during transit to the storage pad from adverse environmental effects such as tornado winds and missiles.

In SAR Appendix A, Section A.7.3.2, "Accident Conditions," the applicant discussed the structural analysis of the MP187 cask and the canisters for postulated accidents, including extreme wind and tornado missiles during transfer operations, and identified the relevant volumes and sections of the Rancho Seco ISFSI FSAR, which the applicant incorporated by reference.

Since the NUHOMS-MP187 cask operates in a horizontal configuration, which is different from the vertical configuration analyzed in the Rancho Seco ISFSI FSAR, the applicant performed a WCS CISF-specific tornado missile impact stability analysis of the NUHOMS-MP187 cask in transfer configuration.

As noted in SAR Appendices A and B, Sections A.3.4.2 and B.3.4.2, both entitled, "Structural," the applicant will use the MP187 cask for onsite transfer of the DSC for its storage in the HSM and AHSM. As such, the tornado missile impact stability analysis of the MP187, which the staff reviewed in Section 5.3.3.4.4, "Structural Analysis for NUHOMS Transfer Casks," of this SER, applies to both cask systems previously approved for the Rancho Seco ISFSI and the Standardized Advanced NUHOMS HSM.

In SAR Appendix B, Section B.12.2.7, "Tornado Wind and Missiles," the applicant noted that the Standardized Advanced NUHOMS system components are designed for tornado and tornado wind effects. In addition, the AHSM and MP187 cask in the transfer configuration are also designed for tornado missile effects. The Standardized Advanced NUHOMS system components are designed and conservatively evaluated for the most severe tornadoes and missiles anywhere within the United States (Region I as defined in NRC RG 1.76), while the WCS CISF is in Region II, a location with less severe tornadoes and tornado missiles.

The applicant incorporated by reference the structural and thermal consequences of the effect of tornado wind and missile loads on the AHSM from Section 11.2.2.2, "Accident Analysis," of the Standardized Advanced NUHOMS Storage System FSAR. As noted in preceding paragraphs, the tornado missile impact stability analysis of the MP187 cask to demonstrate structural adequacy, which the NRC staff reviewed in Section 5.3.3.4.4 of this SER, applies to the Standardized Advanced NUHOMS HSM.

In SAR Appendix C, Section C.12.2.7, "Tornado Wind and Missiles," the applicant discussed the structural consequences of the effects of tornado wind and missile loads on the HSM and canister, referencing the relevant information in Sections 8.2.2, K.3.7.2, and K.11.2.3.2 of the Standardized NUHOMS Storage System FSAR, which the applicant incorporated by reference. The applicant noted that the Standardized NUHOMS system components are designed for tornado and tornado wind effects for the most severe tornadoes and missiles anywhere within the United States (Region I as defined in NRC RG 1.76), while the WCS CISF is in Region II, a location with less severe tornadoes and tornado missiles. In addition, the HSM and MP197HB cask in the transfer configuration are designed for tornado missile effects.

In SAR Appendix C, Section C.7.7.4, “MP197HB Cask Stability and Missile Penetration Analyses,” the applicant discussed cask stability and penetration analyses of the MP197HB cask loaded with the 61BT DSC for the design-basis tornado wind and tornado-generated missiles. The analysis, which the staff reviewed in Section 5.3.3.4.4 of this SER, demonstrates that the MP197HB cask loaded with the 61BT DSC is structurally acceptable for the canister transfer at the WCS CISF.

In SAR Appendix D, Section D.12.2.7, “Tornado Wind and Missiles,” the applicant discussed the structural and thermal consequences of the effects of tornado wind and missile loads on the HSM and canister, referencing information provided in Sections 8.2.2, T.3.7.1, and T.11.2.3.2 of the Standardized NUHOMS Storage System FSAR, which the applicant incorporated by reference. The applicant noted that the Standardized NUHOMS Storage System components are designed for tornado and tornado wind effects for the most severe tornadoes and missiles anywhere within the United States (Region I as defined in NRC RG 1.76), while the WCS CISF is in Region II, a location with less severe tornadoes and tornado missiles. In addition, the HSM and MP197HB cask in the transfer configuration are designed for tornado missile effects.

In SAR Appendix D, Section D.7.7, “Structural Analysis of MP197HB Cask as On-Site Transfer Cask,” the applicant described cask stability and penetration analyses of the MP197HB cask loaded with the 61BTH Type 1 DSC for the design-basis tornado wind and tornado-generated missiles. The analysis, which the staff reviewed in Section 5.3.3.4.4 of this SER, demonstrates that the MP197HB cask loaded with the 61BTH Type 1 DSC is structurally acceptable for the canister transfer at the WCS CISF.

In SAR Section 7.5.3.2.1, “Load Definitions,” the applicant proposed to administratively manage protection from tornado missiles for the short period of time that individual loaded canisters are transferred in certain configurations between the transportation and storage casks. The handling systems (i.e., the CHB crane, the VCT during transfer of the loaded NAC canisters within the CHB, and the CTS, which includes the NAC transfer casks) used during the transfer of the canisters have not been evaluated to withstand the effect of tornados.

In SAR Section 7.5.3.2.1, “Load Definitions,” and Section 7.6.6, “Transport Cask Stability,” the applicant stated that the transportation casks would not be moved into the CHB to begin the railcar unloading process unless the current and forecasted weather indicates safe weather conditions, as defined in Section 7.5.3.2.1. The tornado protection design basis for the loaded storage canisters is risk-informed, in that there is a low potential of a tornado strike in general, the applicant will consider the forecasted condition at the time of starting the transfer process, and the transfer process will be completed in a limited period of time. In addition, there is significant partial protection against tornado effects provided by the CHB framing design (as evaluated in SER Section 5.3.3.1), there is additional protection against direct missile strike provided by the sealed canister and the surrounding cask (i.e., transportation cask, transfer cask, or VCC), and the crane is ITS and therefore robustly designed. Therefore, the staff concluded that there is adequate defense in depth to protect SSCs during transfer operations.

In SAR Appendices E, F, and G, Sections E.12.1.2, E.12.2.2, F.12.1.2, and G.12.1.2, the applicant discussed the site-specific tornado and tornado-driven missile analyses for the NAC-MPC System, NAC-LACBWR, NAC-UMS Storage System, and NAC MAGNASTOR storage system, respectively, referencing the relevant information in the FSARs that the applicant incorporated by reference. The staff verified the information incorporated by reference and finds that the applicant provided sufficient information to demonstrate adequate structural

performance of the NAC cask systems for this accident. The tornado and tornado-driven missile analyses for the individual cask systems appear in the FSAR sections as follows:

- NAC-MPC FSAR Section 11.2.13
- NAC-MPC FSAR Section 11.A.2.13
- NAC-UMS FSAR Section 11.2.11
- NAC MAGNASTOR FSAR Section 12.2.11

Because the components of the various cask systems discussed above have been demonstrated structurally adequate in the design-basis tornado and tornado-driven missile analyses previously for approved casks, the staff finds the applicant's assessment acceptable.

#### **16.3.2.10 Accidents at Nearby Sites**

The applicant's evaluation in SAR Section 12.2.2, "Offsite Accident Analysis," which is referenced in SAR Section 2.2, "Nearby Industrial, Transportation and Military Facilities," indicates that there are no facilities that could contribute to the potential for significant explosions located within 5 miles of the CISF facility.

The staff reviewed and evaluated potential accidents due to nearby facilities in SER Section 2.3.2. In that section, the staff finds that the applicant appropriately identified and analyzed the potential hazards associated with nearby facilities and transportation routes. Based on the staff's review of the information provided by the applicant, and the staff's independent confirmatory calculations described, the staff finds in Section 2.3.2 that the potential hazards from an explosion at a nearby facility or transportation route, or an aircraft crash at the site, present a low risk to public health and safety.

#### **16.3.2.11 Building Structural Failure onto Structures, Systems, and Components**

Section 7.5, "Cask Handling Building," and Section 7.5.3, "Cask Handling Building Structural Design," of the SAR provide the description and design-basis information for the CHB. The CHB and its foundations are Category B ITS structures used to transfer canisters from the transportation casks to the storage overpacks. In SAR Section 7.5.3, the applicant stated that it designed the CHB to meet the requirements of 10 CFR 72.122, which states, in part, that ITS structures must be designed to withstand loads associated with normal conditions and postulated accidents, including natural phenomena events. Natural phenomena events incorporated in the design basis of the CHB included events such as earthquake, high winds and tornado missiles. The licensee designed the CHB to withstand applicable loads and to ensure structural integrity and stability of the primary framing systems, therefore preventing CHB structural failure into other ITS SSCs. The staff's review of the design of the CHB to meet the requirements of 10 CFR 72.122 appears in SER Section 5.3.3.1.

#### **16.3.2.12 Accidents Summary**

For the reasons stated above, the applicant's identification and assessment of accidents meets the requirements of 10 CFR 72.122 to protect public health and safety, 10 CFR 72.124 to maintain SNF in a subcritical condition, 10 CFR 72.126 for radiological protection, and 10 CFR 72.128 for SNF and GTCC waste handling, storage, and retrievability.

### 16.3.3 Other Non-Specified Accidents (None to be Discussed)

The applicant did not identify additional accident scenarios applicable to the WCS CISF. Based on its review in other SER chapters, the staff finds that the design characteristics of the WCS CISF do not pose potential accidents that the applicant has not identified.

### 16.4 Evaluation Findings

The applicant identified and provided complete analyses of the credible off-normal and accident events for operations at the site. Based on the information in the application, the staff concludes the following:

- The SAR includes acceptable analyses of the design and performance of ITS SSCs under off-normal and accident scenarios. For NUHOMS systems, applicable off-normal accidents analyzed in the SAR or incorporated by reference include off-normal transfer loads, extreme temperatures, and postulated release of radionuclides. For NAC systems, applicable off-normal accidents analyzed in the SAR or incorporated by reference include blockage of half the storage cask air inlets, canister off-normal handling load, failure of instrumentation, severe environmental conditions, and small release of radioactive particulate from the canister exterior. For the NAC MAGNASTOR storage system, additional applicable off-normal accidents analyzed in the SAR or incorporated by reference include crane failure during loaded transfer cask movements, and crane/hoist failure during transfer of a TSC to a VCC. Applicable accident events analyzed in the SAR include adiabatic heatup/blockage of air inlets/outlets, drop accidents, earthquakes, lightning, fire/explosion, flood, tornado wind and missiles, and (for NAC vertical systems) tip-over/overtipping.
- The analyses of off-normal and accident events and conditions show that the design of the CISF will acceptably meet the requirements without endangering public health and safety, in compliance with the overall requirements of 10 CFR 72.122.
- The analyses of off-normal and accident events and conditions and reasonable combinations of these and normal conditions show that the design of the CISF will acceptably meet the requirements of 10 CFR 72.124 for the maintenance of the SNF in a subcritical condition.
- The analyses of off-normal and accident events and conditions and reasonable combinations of these and normal conditions show that the design of the CISF will acceptably meet the requirements of 10 CFR 72.126 for criteria for radiological protection.
- The analyses of off-normal and accident events and conditions and reasonable combinations of these and normal conditions show that the design of the CISF will acceptably meet the requirements of 10 CFR 72.128 for handling, storage, and retrievability of the SNF and other radioactive material.

### 16.5 References

American National Standards Institute and American Nuclear Society, "Design Criteria for an Independent Spent Fuel Storage Installation (Dry Storage Type)," ANSI/ANS 57.9-1984.

## 18 CONCLUSION

The staff has reviewed the design, testing, operations, maintenance, and other safety-related activities and features for the WCS Consolidated Interim Storage Facility (CISF), as described in the following documents submitted by the applicant:

- the License Application, which contains general and financial information, the applicant's technical qualifications, technical specifications, and a preliminary decommissioning plan;
- the Safety Analysis Report for the WCS CISF;
- the Emergency Plan for the WCS CISF; and
- the Physical Security Plan for the WCS CISF, which includes the safeguards contingency plan.

Based on the information provided in the above documents, the conditions specified in the proposed Technical Specifications and the license conditions identified in this SER, and the use of previously approved spent nuclear fuel storage systems (NUHOMS<sup>®</sup>-MP187, Standardized Advanced NUHOMS System, Standardized NUHOMS System, NAC-MPC, NAC-UMS<sup>®</sup>, and MAGNASTOR<sup>®</sup>) and transportation systems (NUHOMS-MP187, NUHOMS-MP197, NAC-STC, NAC-UMS, and MAGNATRAN<sup>®</sup>) and the respective final safety analysis reports that the applicant incorporated by reference, the staff concludes that the WCS CISF meets the requirements of 10 CFR Part 72. Pursuant to 10 CFR 72.40(a), the staff has made the following findings:

- 10 CFR 72.40(a)(1) - Based on the evaluation throughout this SER, the staff finds that the applicant's proposed ISFSI design complies with Subpart F of 10 CFR Part 72.
- 10 CFR 72.40(a)(2) - Based on the evaluation in Chapters 2, 4, 7, 12, and 15 of this SER, the staff finds that the proposed site complies with the criteria in Subpart E of 10 CFR Part 72.
- 10 CFR 72.40(a)(3) - Based on the evaluation throughout this SER, the staff finds that the proposed ISFSI would not pose an undue risk to the safe operation of the WCS radioactive material disposal facilities.
- 10 CFR 72.40(a)(4) - Based on the evaluation in Chapter 11 of this SER, the staff has made the finding that the applicant is qualified by reason of training and experience to conduct the operation covered by the regulations in this part.
- 10 CFR 72.40(a)(5) - Based on the evaluation in Chapter 3 of this SER, the staff finds that the applicant's description of its proposed operating procedures to protect health and to minimize danger to life or property are adequate.
- 10 CFR 72.40(a)(6) - Based on the evaluation in Chapter 14 of this SER, the staff finds that the applicant for the ISFSI is financially qualified to engage in the proposed activities in accordance with the regulations in this part.

- 10 CFR 72.40(a)(7) - Based on the evaluation in Chapter 13 of this SER, the staff finds that the applicant's quality assurance plan complies with Subpart G of 10 CFR Part 72.
- 10 CFR 72.40(a)(8) - Based on the evaluation in Chapter 11 of this SER, the staff finds that the applicant's physical protection provisions comply with Subpart H of 10 CFR Part 72.
- 10 CFR 72.40(a)(9) - Based on the evaluation in Chapter 11 of this SER, the staff finds that the applicant's personnel training program complies with Subpart I of 10 CFR Part 72.
- 10 CFR 72.40(a)(10) - Based on the evaluation in Chapter 14 of this SER, the staff finds that the applicant's preliminary decommissioning plan, pursuant to 10 CFR 72.30, provides reasonable assurance that decontamination and decommissioning of the ISFSI at the end of its useful life will provide adequate protection to the health and safety of the public.
- 10 CFR 72.40(a)(11) - Based on the evaluation in Chapter 11 of this SER, the staff finds that the applicant's emergency plan complies with 10 CFR 72.32.
- 10 CFR 72.40(a)(12) - This regulatory requirement is outside the scope of this SER.
- 10 CFR 72.40(a)(13) - Based on the evaluation throughout this SER, the staff finds that there is reasonable assurance that: (i) The activities authorized by the license can be conducted without endangering the health and safety of the public and (ii) these activities will be conducted in compliance with the applicable regulations of Chapter 10 of the Code of Federal Regulations.
- 10 CFR 72.40(a)(14) - Based on the evaluation in Chapter 11 of this SER, the staff finds that the issuance of a license for the WCS CISF will not be inimical to the common defense and security.

## 18.1 References

10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater than Class C Waste."

AREVA, Inc., "NUHOMS®-MP197 Transport Packaging Safety Analysis Report," Revision 17, April 2001 (nonpublic). NRC Docket No. 71-9302. Transmittal dated July 20, 2016. Agencywide Documents Access and Management System (ADAMS) Accession No. ML16207A498.

AREVA, Inc., "Updated Final Safety Analysis Report for the Standardized Advanced NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel," Revision 6, August 2014 (nonpublic). NRC Docket No. 72-1029. Transmittal dated July 13, 2016. ADAMS Accession No. ML16200A178.

AREVA TN Americas, "Updated Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel," Revision 14, September 2014

# Tab 55



CHAIRMAN

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 21, 2021

The Honorable Greg Abbott  
Governor of Texas  
Post Office Box 12428  
Austin, TX 78711

VIA EMAIL: [Wes.Hambrick@gov.texas.gov](mailto:Wes.Hambrick@gov.texas.gov)

Dear Governor Abbott:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your September 10, 2021, letter related to Interim Storage Partners' (ISP) license application to construct and operate a consolidated interim storage facility for spent nuclear fuel and Texas House Bill 7.

ISP submitted its application to the NRC in April 2016. The NRC conducted detailed technical and environmental reviews of the proposed facility. In July 2021, the staff published the Final Environmental Impact Statement for the proposed facility. On September 13, 2021, the NRC released its Safety Evaluation Report and issued a license under Title 10 of the *Code of Federal Regulations*, Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." The license authorizes ISP to construct and operate the Waste Control Specialist Consolidated Interim Storage Facility in Andrews County, Texas. The license was issued pursuant to the NRC's authority under the Atomic Energy Act of 1954, as amended, (AEA) based on the determination that ISP's license application meets the standards and requirements of the AEA and the NRC's regulations.

Throughout the review process, the NRC has worked hard to keep you and your staff updated on any developments. Prior to issuing the license, the NRC's Executive Director for Operations spoke directly with your staff on September 13, 2021, to inform them of the imminent issuance of the license and to answer their questions. A formal letter from the NRC staff notifying you of the license issuance was also transmitted to your office on September 13, 2021.

We appreciate your interest in and concerns about this project. We also value the strong partnership between the NRC and the State of Texas under the Agreement State program. If you have any questions or need any additional information, have your staff contact Andrew Averbach at (301) 415-1956.

Sincerely,

A handwritten signature in black ink, appearing to read "C. T. Hanson", with a stylized flourish at the end.

Christopher T. Hanson

Docket No.: 72-1050

**C.I. 137**

001082



# Tab 56

**WCS\_CISFEISCEm Resource**

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**From:** Richard Hanson <Richard.Hanson@tpwd.texas.gov>  
**Sent:** Thursday, March 09, 2017 9:02 AM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] Docket ID NRC-2016-0231  
**Attachments:** WL37585-WasteControlSpecialists-SpentFuelStorage-AndrewsCo-C-03-09-17.pdf

Attached are the Texas Parks and Wildlife Department comments on Docket ID NRC-2016-0231.

Rick Hanson  
Wildlife Habitat Assessment Program  
Texas Parks and Wildlife Department  
1702 Landmark Lane, Suite 3  
Lubbock, TX 79415  
Office: (806) 761-4936  
Richard.Hanson@tpwd.texas.gov

**Federal Register Notice:** 81FR79531  
**Comment Number:** 6141

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**From:** Richard Hanson

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**Recipients:**

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March 9, 2017

Ms. Cindy Bladey  
Office of Administration  
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Fort Worth

Carter P. Smith  
Executive Director

RE: Docket ID NRC-2016-0231

Dear Ms. Bladey:

Texas Parks and Wildlife Department (TPWD) received the request for review on the scope of the U.S. Nuclear Regulatory Commission's (NRC) Environmental Impact Statement (EIS) for Waste Control Specialists, LLC (WCS) license application to store up to 5,000 metric tons of uranium (MTU) for a period of 40 years in a consolidated interim storage facility (CISF) to be located at the WCS site in Andrews County, Texas. TPWD staff has reviewed the information provided and offers the following comments and recommendations concerning this project.

**Project Description**

WCS has prepared a CISF license application for approval by the NRC. If the requested license is issued, WCS anticipates subsequently requesting an amendment to the license for authorization to possess and store an additional 5,000 MTUs of spent nuclear fuel (SNF) for each of the expansion phases to be completed over the course of twenty years. WCS anticipates that 40,000 MTUs of SNF would be stored at the CISF upon completion of all eight phases.

WCS currently operates a commercial waste management facility on approximately 1,338 acres of land. The CISF would be located north of the existing WCS radioactive waste storage, processing, and disposal facilities. The facility would be built in eight phases, with one phase being completed approximately every 2.5 years. Initial construction of phase one would encompass approximately 155 acres. Each phase would increase the overall footprint incrementally until the final footprint reaches approximately 320 acres with the completion of phase eight. Because the site is currently undeveloped, potential land use impacts would primarily be from site preparation and construction activities. Approximately 12 acres would be used for contractor parking and lay down areas during facility construction. The total disturbed area would be approximately 332 acres including the contractor parking and lay down area. The contractor lay down and parking area would be restored after completion of the facility construction.

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WCS has prepared an environmental report to evaluate the radiological and non-radiological impacts associated with construction and operation of the CISF for SNF and Reactor-Related Greater than Class C Low-Level Radioactive Waste.

### **Federal Laws**

#### *Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling/purchasing, possessing, transporting, and importing of migratory birds, their eggs, parts and nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

Section 3.5.3.3 of the environmental report states “Birds were surveyed through observation and by call at the proposed CISF and its vicinity to document species, potential breeding species, seasonal migrants and winter residents.”

**Recommendation:** If migratory bird species are found nesting on or adjacent to the project area, they must be dealt with in a manner consistent with the MBTA. TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March through August, to avoid adverse impacts to this group. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance to ensure that no nests with eggs or young will be disturbed by operations. Any vegetation (trees, shrubs, and grasses) where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.

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*Endangered Species Act*

Federally-listed animal species and their habitat are protected from “take” on any property by the Endangered Species Act (ESA). Take of a federally-listed species can be allowed if it is “incidental” to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Any take of a federally-listed species or its habitat without the required take permit (or allowance) from the USFWS is a violation of the ESA.

Lesser prairie-chicken (*Tympanuchus pallidicinctus*)

Section 3.5.3.3 states “The USFWS currently lists the lesser prairie chicken as a threatened species.”

On April 10, 2014, the USFWS published a final rule which listed the lesser prairie-chicken (LPC) as a threatened species. LPC Final Rule, 79 Fed. Reg. 19, 974 (Apr. 10, 2014). By Order dated September 1, 2015, U.S. District Judge Robert Junell vacated this rule. See, *Permian Basin Petroleum Association, et al. v. Department of the Interior, Cause No. 14-CV-00050*, in the U.S. District Court for the Western District of Texas, Midland Division. The Order emphasizes the conservation efforts as set out in LPC Range-Wide Conservation Plan (RWP).

On July 19, 2016 the USFWS fulfilled the court ruling that had vacated the ESA listing decision by officially removing the LPC from the Federal List of Endangered and Threatened Wildlife. The USFWS is undertaking a thorough re-evaluation of the LPC’s status and the threats the species faces using the best available scientific information to determine whether a new listing under the ESA is warranted.

**Recommendation:** TPWD recommends the NRC and WCS monitor the listing status of the LPC. Future changes in listing status could require consultation, permitting, and mitigation with the USFWS.

Section 3.5.3.3 of the environmental report states “Historically a WCS ranch manager reported seeing a female lesser prairie chicken near the CISF (Ortega, Bryant, Petit, & Rylander, 1997) but the sighting was never verified.”

The LPC Interstate Working Group developed the RWP which is a voluntary plan administered by the Western Association of Fish and Wildlife Agencies. The Covered Area of the RWP includes public and private property that currently provides or could potentially provide suitable habitat for the LPC within the current

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estimated occupied range of the LPC and 10 miles around that range (EOR+10). The Covered Area is represented in the Southern Great Plains Crucial Habitat Assessment Tool (CHAT).

As seen on the attached map, the proposed project is within the EOR+10 in CHAT Category 3 (Modeled Habitat). Therefore, this project is eligible for enrollment in the RWP.

**Recommendation:** Enrollment is recommended for projects that are within the EOR+10 or where the impact buffer of a new project extends into the EOR+10. Additional information including a link to the RWP can be found at [http://www.wafwa.org/initiatives/grasslands/lesser\\_prairie\\_chicken/](http://www.wafwa.org/initiatives/grasslands/lesser_prairie_chicken/)

### State Law

#### *Parks and Wildlife Code, Section 68.015*

Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for the capture, trap, take, or kill (incidental or otherwise) of state-listed species. A copy of *TPWD Guidelines for Protection of State-Listed Species*, which includes a list of penalties for take of species, can be found on-line at [http://tpwd.texas.gov/huntwild/wild/wildlife\\_diversity/habitat\\_assessment/media/tpwd\\_statelisted\\_species.pdf](http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/media/tpwd_statelisted_species.pdf). State-listed species may only be handled by persons with appropriate authorization from the TPWD Wildlife Permits Office. For more information, please contact the Wildlife Permits Office at (512) 389-4647.

Texas horned lizard (*Phrynosoma cornutum*) State-listed Threatened

Section 3.5.4 of the environmental report states “The Texas horned lizard has been reported as present on the property controlled by WCS by previous surveys.”

Texas horned lizards are generally active in this part of Texas from mid-April through September. At that time of year, they may be able to avoid slow (less than 15 miles per hour) moving equipment. The remainder of the year, this species hibernates only a few inches underground and they will be much more susceptible to earth moving equipment and compaction.

**Recommendation:** TPWD recommends WCS avoid disturbing the Texas horned lizard and colonies of its primary food source, the Harvester ant

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(*Pogonomyrmex* sp.), during clearing and construction. TPWD recommends a permitted biological monitor be present during construction to try to relocate Texas horned lizards if found. If the presence of a biological monitor during construction is not feasible, Texas horned lizards observed during construction should be allowed to safely leave the site.

A mixture of cover, food sources, and open ground is important to the Texas horned lizard and Harvester ant. Disturbed areas within suitable habitat for the Texas horned lizard should be revegetated with site-specific native, patchy vegetation rather than sod-forming grasses.

### Species of Concern/Special Features

In addition to state and federally-protected species, TPWD tracks special features, natural communities, and rare species that are not listed as threatened or endangered. TPWD actively promotes their conservation and considers it important to evaluate and, if necessary, minimize impacts to rare species and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future. These species and communities are tracked in the Texas Natural Diversity Database (TXNDD).

No records of rare, threatened or endangered species have been documented within 1.5 miles of the project site in the TXNDD. However, based on the project location the dunes sagebrush lizard (*Sceloporus Acrenicolus*) (DSL) may be impacted from the proposed project.

Section 3.5.4 of the environmental report states “The sand dune lizard has been reported in the area northwest of the proposed CISF in past site surveys.”

In December 2010, the DSL, also known as the sand dune lizard, was proposed for federal listing under the ESA. Since that time, the USFWS has received new information regarding suitable and occupied habitat for this species, and voluntary conservation measures (discussed below) have been established. Based on these efforts, on June 13, 2012, the USFWS determined the DSL is no longer in danger of extinction. However, the USFWS will closely monitor the conservation measures to ensure they are being implemented and effectively address identified threats. The USFWS can then reevaluate whether the DSL requires protection the ESA.

A voluntary conservation program has been created to protect suitable habitat for the DSL and minimize adverse impacts from development. In February 2012, the



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March 9, 2017

USFWS approved the Texas Conservation Plan for the Dunes Sagebrush Lizard, which was developed in consultation with the USFWS, the Texas Comptroller of Public Accounts, TPWD, and several other agencies. This plan can be found at [https://www.fws.gov/southwest/es/Documents/R2ES/TX\\_Cons\\_Plan\\_DSL\\_20110927.pdf](https://www.fws.gov/southwest/es/Documents/R2ES/TX_Cons_Plan_DSL_20110927.pdf). The goal of the Texas Conservation Plan is to facilitate continued economic activity in this region and to promote conservation of the DSL in compliance with the ESA for covered activities.

Based on the Texas Conservation Plan final map of the permit area (probability of suitable DSL habitat) the project site includes an area that is High Likelihood of Occurrence for this species. Potential adverse impacts to this species could include removal, fragmentation, and destabilization of shinnery oak habitat during construction.

**Recommendation:** TPWD recommends WCS avoid adverse impacts to the DSL and suitable DSL habitat in implementing this project.

TPWD also recommends implementation of the following conservation measures within suitable DSL habitat:

- To minimize additional fragmentation of habitat, maximize use of existing developed areas and roads
- Within suitable DSL habitat confine construction to the period during which the DSL is inactive (i.e. October – March).
- Minimize the footprint of the development within DSL habitat
- Restrict vehicle traffic to the extent feasible
- Avoid aerial sprayed application of approved herbicide for weed control
- Avoid the introduction of non-native vegetation
- Reclaim DSL habitat with appropriate native vegetation using locally-sourced native seeds and vegetation
- During post construction, control mesquite and other invasive and problematic herbaceous and woody species that would degrade or impair DSL habitat

Please note that the absence of TXNDD information in an area does not imply that a species is absent from that area. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural

Ms. Cindy Bladey  
Page 7  
March 9, 2017

communities, or other significant features within your project area. These data are not inclusive and cannot be used as presence/absence data. This information cannot be substituted for on-the-ground surveys. The TXNDD is updated continuously. As the project progresses and for future projects, please request the most current and accurate information at [TexasNatural.DiversityDatabase@tpwd.texas.gov](mailto:TexasNatural.DiversityDatabase@tpwd.texas.gov).

**Recommendation:** TPWD recommends the NRC and WCS review the TPWD county list for Andrews County, as rare species in addition to those discussed above could be present depending upon habitat availability. These lists are available online at <http://tpwd.texas.gov/gis/rtest/>. If during construction, the project area is found to contain rare species, natural plant communities, or special features, TPWD recommends that precautions be taken to avoid impacts to them. The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for federally listed species. For the USFWS rare species lists by county please visit <http://ecos.fws.gov/ipac/>.

Determining the actual presence of a species in a given area depends on many variables including daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency and population density (both wildlife and human). The absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, taking into account all the variable factors contributing to the lack of detectable presence. If encountered during construction, measures should be taken to avoid impacting wildlife.

I appreciate the opportunity to provide preliminary input on potential impacts related to this project, and I look forward to reviewing the EIS. Please contact me at (806) 761-4936 or [Richard.Hanson@tpwd.texas.gov](mailto:Richard.Hanson@tpwd.texas.gov) if you have any questions.

Sincerely,

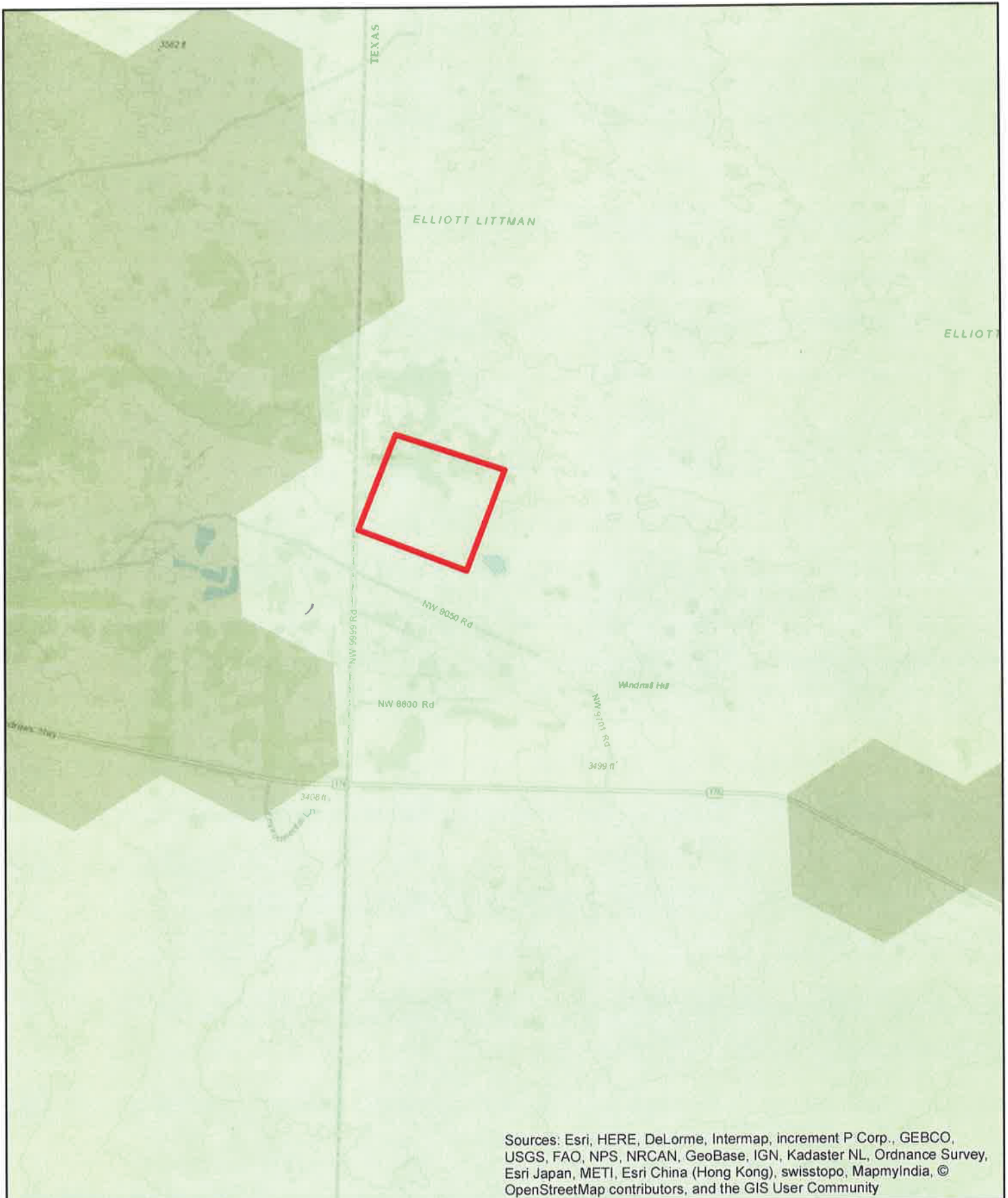


Rick Hanson  
Wildlife Habitat Assessment Program  
Wildlife Division

RAH:jn37585

Attachment

# CHAT Score



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Date: 02/21/17

Map compiled by the Texas Parks and Wildlife Department, Wildlife Habitat Assessment Program. No claims are made to the accuracy of the data or to the suitability of the data to a particular use.



Life's better outside®

Legend **C.I. 534**  
 CHAT Score  
 1 Focal Area  
 2 Connectivity Zone  
 3 Modeled Habitat  
 4 Modeled Non-Habitat  
 5 Outside EOR >10 miles

00103

# Tab 57

**WCS\_CISFEISCEm Resource**

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**From:** Dexter Harmon <dexterh@forl.com>  
**Sent:** Monday, October 1, 2018 2:40 PM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] High-Level Nuclear Waste Storage

May Ma, Office of Administration,  
Andrews Co., Texas and Lea Co., New Mexico are in the heart of the Permian Basin. It is the most important Oil & Gas producing region in the US and is too valuable to the country to consider storing high-level nuclear waste in the middle of it. Please find a more reasonable place for it.

Best regards,

**Dexter Harmon**  
**Exploration Manager**



**6101 Holiday Hill Road**  
**Midland, Texas 79707**  
**Cell 432-559-2417**

# Tab 58

## **WCS\_CISFEISCEm Resource**

---

**From:** Dexter Harmon <dexterh@forl.com>  
**Sent:** Thursday, November 15, 2018 3:44 PM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] High-level nuclear waste

I am opposed to the transportation of high-level nuclear waste through our Texas cities by rail and it being stored for the next 100 years above ground in Andrews County, Texas.

The Permian Basin is too valuable to the US because of its energy production to risk being partially shut down due to any accident involving this material.

I also think it would be a rich easy target for anyone wanting to do evil to the US.

Best regards,

**Dexter Harmon**  
**Exploration Manager**



**6101 Holiday Hill Road**  
**Midland, Texas 79707**  
**Cell 432-559-2417**

# Tab 59



**WCS\_CISFEISCEm Resource**

---

**From:** Monica Perales <monicap@forl.com>  
**Sent:** Monday, November 19, 2018 7:04 PM  
**To:** WCS\_CISFEIS Resource  
**Cc:** Borges Roman, Jennifer; Park, James; Monica Perales; Tommy Taylor  
**Subject:** [External\_Sender] Public Scoping Comment Docket ID NRC-2016-0231  
**Attachments:** Public Scoping Comments on WCS Nov.19 2018.pdf

Please find the comments from Fasken Oil and Ranch, Ltd. and the PBLRO Coalition attached.

  
**FASKEN**  
OIL AND RANCH  
Monica R. Perales  
Staff Attorney  
Fasken Oil and Ranch, Ltd.  
6101 Holiday Hill Road  
Midland, Texas 79707  
Telephone: (432) 687-1777  
Facsimile: (432) 687-2509  
Email: [monicap@forl.com](mailto:monicap@forl.com)

**Federal Register Notice:** 83FR44922  
**Comment Number:** 26728

**Mail Envelope Properties** (SN1PR19MB05601B167DDA724DE84C77B6D5D90)

**Subject:** [External\_Sender] Public Scoping Comment Docket ID NRC-2016-0231  
**Sent Date:** 11/19/2018 7:03:40 PM  
**Received Date:** 11/19/2018 7:03:47 PM  
**From:** Monica Perales

**Created By:** monicap@forl.com

**Recipients:**

**Post Office:** SN1PR19MB0560.namprd19.prod.outlook.com

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	329	11/19/2018 7:03:47 PM
image003.png	13508	
Public Scoping Comments on WCS Nov.19 2018.pdf		273586

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**



**FASKEN OIL AND RANCH, LTD.**

6101 Holiday Hill Road  
MIDLAND, TEXAS 79707  
(432) 687-1777

November 19, 2018

May Ma, Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001.

Re: Proposed WCS / Interim Storage Partners High  
Level Nuclear Waste Storage Facility  
Andrews County, Texas  
Docket No. NRC-2016-0231

Please consider this as the formal opposition of Fasken Oil and Ranch, Ltd., (“Fasken”) and PBLRO Coalition (“PBLRO”) against the WCS CISF High Level Nuclear Waste Storage Facility (“WCS”) which is proposed to be located in Andrews County, Texas.

Fasken owns approximately one-eighth of the surface land and minerals that make up Andrews County. Fasken conducts oil and gas operations on their own land and upon leases in Andrews and surrounding counties.

The PBLRO is a coalition of landowners, ranchers, royalty owners and oil and gas operators with interests in land, minerals and agriculture throughout the Permian Basin. The PBLRO Coalition was in response the proposed siting of interim high-level nuclear waste facilities within the Permian Basin.

“The Permian Basin covers an area approximately 250 miles wide and 300 miles long and is composed of more than 7,000 fields.” (*Texas Railroad Commission*, 2018) Fields are underground reservoirs of commercially valuable oil or gas. In the Permian Basin, production from those fields emerges from depths ranging from a few hundred feet to five miles below the surface. (*Texas Railroad Commission*, 2018) Recent increased use of enhanced-recovery practices in the Permian Basin has resulted in the Permian Basin becoming “the nation’s most prolific oil producing area and the largest crude oil producing region in the United States.” (*The U.S. Energy Information Administration*, 2018).

### **Fictitious Consent**

Andrews County is located within the Permian Basin and authorities likely selected this West Texas county as a site for high-level nuclear waste due to favorable conditions including the geographic characteristics, sparse population, with a large percentage being Hispanic, and the lack of economic diversity. Also a factor in the application is the applicant's misrepresenting consent to the NRC based upon the Andrews County Judge and Commissioners' issuance of a resolution supporting the expansion of their low-level waste facility to include high-level waste. That resolution, however, was enacted without citizen engagement or participation. The County's tactic of proceeding quietly was likely purposeful after contemplating the controversy and narrow vote encountered when they proposed a low-level nuclear waste facility.

We oppose approval of the application for its failure to educate and inform Andrews County residents, to engage them in the process and for the lack of full disclosure. There is no true consent and to say otherwise is false.

Not only do we find the NRC's consent-based protocol to be flawed, but we also find the failure to obtain consent from neighboring communities to be defective. There has not been notice or opportunity for public participation in neighboring communities that may be directly or indirectly affected by the WCS license to store high-level nuclear waste. Those most directly affected are the communities along the transportation corridor through which the waste will travel. According to the WCS application, an estimated twenty thousand casks will travel by rail through Midland, Texas, yet the city of Midland was completely unaware of WCS' proposal until October of 2018. Upon being made aware of WCS' application and transportation plan, the Midland City Council hosted a public hearing at which Elicia Sanchez, WCS Vice President, and Midland residents testified. It was indisputably fair and open to public participation and concluded with the passage of a resolution objecting to the transportation of high-level nuclear waste through Midland. In addition, in the five weeks that have transpired since Midland residents first became aware of the WCS application, over 1300 Midland residents have signed a petition in opposition to the WCS license to store high-level nuclear waste.

### **Site Selection Puts American Energy at Risk and Fails to Present True Data**

We oppose situating high-level nuclear waste in Andrews County or anywhere within the Permian Basin due to the inherent risks the waste poses to the region that has placed Texas and the United States in the position of being a global energy leader.

According to Commissioner Ryan Sitton of the Texas Railroad Commission, the "Permian Basin output has positioned America to be a global leader in energy production. Oil and gas production in the Permian has grown exponentially over the last few years, bringing with it unprecedented job growth and revenue for the State of Texas. It is dramatically improving America's economic strength and national security." (*Texas Railroad Commissioner Ryan Sitton describing the Permian Basin*, October 25, 2018)

We find fault in the WCS application's failure to accurately recognize Andrews County's importance to the nation's energy independence. The application depicts Andrews County as simply an area with oil and gas activity. WCS grossly understates the importance of what is transpiring in Andrews County and the Permian Basin.

According to the Texas Railroad Commission, which has primary oversight over the State of Texas' oil and gas industry, 338 drilling permits have been issued in Andrews County in 2018. The Commission reports that last year, 37,543,497 bbl of oil and 65,584,676 mcf of gas were produced in Andrews County.

Not only does the application fail in its depiction of Andrews County, but it also fails to account for the prospect of damage to the land and minerals in the area and the County's budgetary losses if such damage were to occur. WCS discusses its contribution to the Andrews County budget through a profit sharing plan, however, its application fails to acknowledge the much greater fiscal impact which the oil and gas industry has upon the county's budget. Revenues to the County resulting from oil and gas production literally dwarf any impact that might be seen from the proposed high-level nuclear waste storage facility, yet they are put at risk with the approval of the WCS license.

The application also fails to provide an analysis or method by which land and minerals are valued for potential bonding or insurance. It fails to provide data on condemnation of land and minerals due to exposure or contamination of high-level waste. The applicant should be required to present their methodology for specific risks to land, minerals and agriculture as well as an objective analysis of impact upon those values should a leak or exposure occur.

We oppose the application and believe it should be denied for its failure to provide an accurate picture of the oil and gas industry in Andrews County and the Permian Basin and for its failure to present an objective harms-benefit analysis.

#### **The Application is Not Realistic**

We oppose the issuance of a license to store high-level nuclear waste because the applicant is proceeding under the assumption that the storage site will be temporary and that a permanent repository will be established. There is no guarantee that a permanent repository will be established in the future. For this reason, there must be an element of the analysis that realistically considers and accounts for the permanency of the proposed site and the implications of a storage facility that will outlive all generations and, possibly, civilization. The WCS application fails to account for the possibility of permanency, which is a real possibility if the license is granted, thus the application is inadequate and fails.

#### **The Analysis of Groundwater is Flawed**

We oppose the WCS application due to the applicant's failure to adequately address issues raised in a TCEQ memo dated August 14, 2007 and drafted by technicians at the Texas Commission for Environmental Quality. After nearly four years of studying the WCS site, the technicians determined that groundwater contamination was possible. TCEQ's executive director responded by dismissing the technicians' concerns and proceeded to grant a license to WCS to store low-level waste. The following year, that same executive director left his position at the TCEQ to work as a lobbyist for WCS. We find this suspect. Dismissing the findings of the technicians was profoundly prejudiced and now, WCS' responses to questioning are generalized and fail to disprove the findings of the technicians. Evidence of groundwater and concerns regarding the contamination of groundwater rise to the level of warranting an unbiased and transparent study before a license to store high-level waste is issued.

**The Application's Data is Speculative, and the Method is Flawed**

We oppose the granting of a license that is based upon an application that is an exercise in self-study and self-assessment. The Nuclear Regulatory Commission's application method is a flawed approach as it is logical to assume an applicant's lack of objectivity. Compounding that problem is the lack of data. It is illogical to issue a license to store high-level nuclear waste when data regarding casks, emergency preparedness, risks and assumption of liability are unfinished, unavailable and nonexistent. We have participated in public discussions hosted by the NRC and continue to be stonewalled when we inquire as to missing elements of emergency preparedness, emergency response zones, cask testing and the like. It has been our firsthand experience in dealing with the applicant and the NRC during public discussions that both have failed to explain the chain of responsibility, both have failed to adequately address real harm risks, and both have failed to account for the increased threat of high level waste by applying the effects of low-level waste in their analysis. For these inadequacies, for the failure to account for realistic risks to health, safety, environment and economy, we oppose the approval of the WCS application.

On behalf of Fasken Oil and Ranch, Ltd. and of the PBLRO, I appreciate your consideration of our concerns, as outlined in this letter and respectfully request that the WCS application for a license to store high-level nuclear waste in Andrews County be denied.

Sincerely,

Fasken Oil and Ranch, Ltd.  
PBLRO



Tommy E. Taylor  
Director of Oil and Gas Development  
PBLRO Coalition Member

# Tab 60



SUNI Review Complete  
Template=ADM-013  
E-RIDS=ADM-03  
ADD: James Park

**As of:** 11/4/20 9:04 AM  
**Received:** November 03, 2020  
**Status:** Pending\_Post  
**Tracking No.** kh2-godn-18tm  
**Comments Due:** November 03, 2020  
**Submission Type:** Web

# PUBLIC SUBMISSION

Comment (60)  
Publication Date 5/8/2020  
CITATION 85 FR 27447  
PMD-07201051

**Docket:** NRC-2016-0231

Waste Control Specialists LLC's Consolidated Interim Spent Fuel Storage Facility Project

**Comment On:** NRC-2016-0231-0317

Interim Storage Partners Consolidated Interim Storage Facility Project

**Document:** NRC-2016-0231-DRAFT-0371

Comment on FR Doc # 2020-09795

---

## Submitter Information

**Email:** james.sullivan@gov.texas.gov

**Government Agency Type:** State

**Government Agency:** Office of the Governor of Texas

---

## General Comment

On behalf of Governor Abbott, I hereby submit the attached comment in Docket ID NRC-2016-0231.

James P. Sullivan  
Deputy General Counsel  
Office of the Governor of Texas  
1100 San Jacinto Boulevard, Fourth Floor  
Austin, Texas 78701

---

## Attachments

NRC Comment of Governor Abbott

**C.I. 1128**



GOVERNOR GREG ABBOTT

November 3, 2020

Office of Administration  
Mail Stop TWFN-7-A60M  
U.S. Nuclear Regulatory Commission (NRC)  
Washington, D.C. 20555-0001  
ATTN: Program Management, Announcements, and Editing Staff

Re: Interim Storage Partners (ISP) Consolidated Interim Storage Facility Project,  
Docket ID NRC-2016-0231

Dear Office of Administration Staff:

As Governor of Texas, I strongly oppose ISP's application for a license to construct and operate a consolidated interim storage facility in Andrews County, Texas. Having consulted with numerous state agencies, including the Texas Department of Public Safety, the Texas Commission on Environmental Quality, and the Texas Department of Transportation, I urge the NRC to deny ISP's license application.

If ISP's license application were approved, its proposed facility would store spent nuclear fuel and Greater-Than-Class-C waste, both of which present a greater radiological risk than Texas is prepared to allow. This deadly radioactive waste — up to 40,000 metric tons of uranium — would sit right on the surface of the facility in dry cask storage systems. Spent nuclear fuel is so dangerous that it belongs in a deep geologic repository, not on a concrete pad above ground in Andrews County. *See, e.g.*, 42 U.S.C. § 10101(18); *Nevada v. DOE*, 457 F.3d 78, 81 (D.C. Cir. 2006). This location could not be worse for storing ultra-hazardous radioactive waste.

Andrews County lies within the Permian Basin Region, which has surpassed Saudi Arabia's Ghawar Field as the largest producing oilfield in the world. There are approximately 250,000 active oil-and-gas wells in Texas's portion of the Permian Basin. In 2019, oil production in the Permian Basin exceeded 1.5 billion barrels, and the oil-and-gas industry directly employed 87,603 individuals in the region. Also in 2019, the Permian Basin was responsible for \$9 billion in severance taxes and royalties to the State of Texas. In 2018, the Permian Basin produced more than 30 percent of total U.S. crude oil and contained more than 40 percent of proved oil reserves. In short, the Permian Basin is a significant economic and natural resource for the entire country.

The proposed ISP facility imperils America's energy security because it would be a prime target for attacks by terrorists, saboteurs, and other enemies. Spent nuclear fuel is currently scattered across the country at various reactor sites and storage installations. Piling it up on the surface of the Permian **C.I. 1128**

Office of Administration, NRC

November 3, 2020

Page 2

Basin, as ISP seeks to do, would allow a terrorist with a bomb or a hijacked aircraft to cause a major radioactive release that could travel hundreds of miles on the region's high winds. Such an attack would be uniquely catastrophic because, on top of the tragic loss of human life, it would disrupt the country's energy supply by shutting down the world's largest producing oilfield. The Permian Basin is already a target for America's enemies, and granting ISP's license application would paint an even bigger bullseye.

Under the National Environmental Policy Act of 1969, the NRC has an obligation to consider the environmental effects of a terrorist attack on the proposed ISP facility. See *Mothers for Peace v. NRC*, 449 F.3d 1016, 1028–35 (9th Cir. 2006); but see *N.J. Dep't of Env'tl. Prot. v. NRC*, 561 F.3d 132, 136–43 (3d Cir. 2009) (creating circuit split on issue); *New York v. NRC*, 589 F.3d 551, 554 n.1 (2d Cir. 2009) (per curiam) (avoiding circuit split because “the NRC did sufficiently take into account acts of terrorism”). Perhaps recognizing as much, the NRC addressed the risk of terrorism in section 4.19 of its Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel. See 10 C.F.R. § 51.23 (cross-referencing NUREG-2157). The Generic Environmental Impact Statement determined (at page 4-97) that terrorism's “environmental risk is SMALL” during the period beyond a facility's license term. But see 42 U.S.C. § 2210e (reflecting Congress's judgment that the risk of a terrorist attack on a nuclear facility warrants the NRC's careful attention).

Now, in sections 1.4.4 and 5.1.3 of the Draft Environmental Impact Statement for the license application in Andrews County, the NRC apparently seeks to apply its generic terrorism determination to ISP. The proposed ISP facility, however, would be a uniquely provocative target: The probability of a terrorist attack is higher than for a generic reactor site, because the consequences are higher when a terrorist can disrupt the country's energy supply with a major radioactive release. So the Generic Environmental Impact Statement does not adequately assess terrorism risk as to ISP in particular, while the Draft Environmental Impact Statement does not speak to that issue at all. Indeed, the word “terrorism” appears just once, in a mere citation, in the Draft Environmental Impact Statement (at page 2-31).

Although the Draft Environmental Impact Statement repeatedly refers to ISP's construction and operation of a “consolidated *interim* storage facility,” it would be naïve to believe the highlighted word. ISP's application seeks a 40-year license, with the possibility of a 20-year renewal. The Draft Environmental Impact Statement simply assumes (at pages xix, 1-3, 2-2, 8-1, 9-16) that a permanent geologic repository will be developed and licensed before those 60 years are up, without addressing any contingency for the spent nuclear fuel if such a repository is not ready when ISP's license expires. Those rosy assumptions are unsound: Radioactive waste has “the capacity to outlast human civilization as we know it,” *Nuclear Energy Inst., Inc. v. EPA*, 373 F.3d 1251, 1257 (D.C. Cir. 2004) (per curiam), and any spent nuclear fuel that comes to the proposed ISP facility will be there to stay.

Congress began working on a lasting solution to the spent nuclear fuel problem by passing the Nuclear Waste Policy Act of 1982, which set standards for a permanent geologic repository, and the NWPA Amendments Act of 1987, which designated Yucca Mountain as the only site for it. Today, 38 years later, there is still no permanent geologic repository, with Yucca Mountain effectively having been abandoned. See, e.g., *New York v. NRC*, 824 F.3d 1012, 1014–15 (D.C. Cir. 2016); *In re Aiken County*, 645 F.3d 428, 430–33 (D.C. Cir. 2011). Once again, then, “[t]he [NRC] apparently has no long-term plan other than hoping for a geologic repository. If the government continues to fail in its quest to establish one, then [spent nuclear fuel] will seemingly be stored on site at nuclear plants on a permanent

Office of Administration, NRC

November 3, 2020

Page 3

basis. The [NRC] can and must assess the potential environmental effects of such a failure.” *New York v. NRC*, 681 F.3d 471, 479 (D.C. Cir. 2012).

The Generic Environmental Impact Statement concedes (at page 4-95) that “additional security requirements may be necessary in the future if spent fuel remains in storage for a substantial period of time. Under those circumstances, it is reasonable to assume that, if necessary, the NRC will issue orders or enhance its regulatory requirements for ISFSI and DTS security, as appropriate, to ensure adequate protection of public health and safety and the common defense and security.” This approach to future terrorist threats — essentially, a promise of *I’ll tell you later* — is not good enough and does not protect Texas and its citizens.

Finally, safe transportation of spent nuclear fuel would require specialized emergency response equipment and trained personnel, as well as significant infrastructure investments. Texas currently has four counties (Bexar, Dallas, Midland, and Nueces) and one city (San Antonio) that have passed resolutions prohibiting the transportation of spent nuclear fuel and high-level waste. According to the Draft Environmental Impact Statement (at page 3-8), the cargo currently shipped on rail lines through the Permian Basin consists primarily of “oilfield commodities such as drilling mud, hydrochloric acid, fracking sand, pipe, and petroleum products, including crude oil, as well as iron and steel scrap.” There are also significant agricultural commodities. In the event of a rail accident or derailment, even absent a radiological release, the resources and logistics required to address such an accident would severely disrupt the transportation of oilfield and agricultural commodities, to the detriment of the entire country.

In light of the grave risks associated with the proposed ISP facility, the absence of a permanent geologic repository, and the importance of the Permian Basin to the country’s energy security and economy, I respectfully and emphatically request that the NRC deny ISP’s license application.

Sincerely,



Greg Abbott  
Governor

GA:jsk

cc: The Honorable Dan Brouillette, Secretary, U.S. Department of Energy  
The Honorable Chad F. Wolf, Acting Secretary, U.S. Department of Homeland Security  
Colonel Steven C. McCraw, Director, Texas Department of Public Safety  
Mr. Toby Baker, Executive Director, Texas Commission on Environmental Quality  
Ms. Ashley Forbes, Director, Radioactive Materials Division, TCEQ  
Mr. James M. Bass, Executive Director, Texas Department of Transportation  
Mr. Wei Wang, Executive Director, Texas Railroad Commission

**C.I. 1128**

001110

# Tab 61

SUNI Review Complete  
Template=ADM-013  
E-RIDS=ADM-03  
ADD: James Park

**As of:** 11/4/20 9:14 AM  
**Received:** November 03, 2020  
**Status:** Pending\_Post  
**Tracking No.** kh2-ioec-pk6q  
**Comments Due:** November 03, 2020  
**Submission Type:** Web

# PUBLIC SUBMISSION

Comment (62)  
Publication Date 5/8/2020  
CITATION 85 FR 27447  
PMD-07201051

**Docket:** NRC-2016-0231

Waste Control Specialists LLC's Consolidated Interim Spent Fuel Storage Facility Project

**Comment On:** NRC-2016-0231-0317

Interim Storage Partners Consolidated Interim Storage Facility Project

**Document:** NRC-2016-0231-DRAFT-0373

Comment on FR Doc # 2020-09795

---

## Submitter Information

**Email:** chikaodi.agumadu@tceq.texas.gov

**Government Agency Type:** State

**Government Agency:** TCEQ

---

## General Comment

On behalf of TCEQ, please find our comments regarding the Notice by the Nuclear Regulatory Commission: Interim Storage Partners Consolidated Interim Storage Facility Project.

If you have any questions concerning the enclosed comments, please contact Mr. Brad Broussard of the Radioactive Materials Division, at (512)239-6380, or at brad.broussard@tceq.texas.gov.

Thank you,

Chikaodi Agumadu  
Texas Commission on Environmental Quality  
Intergovernmental Relations Division

---

## Attachments

NRC Comments\_11032020

**C.I. 1148**

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 3, 2020

Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Program Management, Announcements and Editing Staff

Subject: Draft Environmental Impact Statement for Interim Storage Partners License Application to Construct and Operate a Consolidated Interim Storage Facility for Spent Nuclear Fuel and Greater-Than Class C Waste (Docket ID NRC-2016-0231)

Dear Office of Administration Staff:

The Texas Commission on Environmental Quality appreciates the opportunity to comment on the U.S. Nuclear Regulatory Commission Draft Environmental Impact Statement (EIS) for Interim Storage Partners' License Application to Construct and Operate a Consolidated Interim Storage Facility for Spent Nuclear Fuel and Greater-Than Class C Waste. Enclosed please find the TCEQ's detailed comments relating to the NRC's draft EIS referenced above. If you have any questions concerning the enclosed comments, please contact Mr. Brad Broussard of the Radioactive Materials Division, at (512) 239-6380, or at [brad.broussard@tceq.texas.gov](mailto:brad.broussard@tceq.texas.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Toby Baker".

Toby Baker  
Executive Director  
Texas Commission on Environmental Quality

AF/bb

**C.I. 1148**

**Texas Commission on Environmental Quality (TCEQ) Comments on the U.S. Nuclear Regulatory Commission (NRC) Draft Environmental Impact Statement (EIS) for Interim Storage Partners (ISP's) License Application to Construct and Operate a Consolidated Interim Storage Facility (CISF) for Spent Nuclear Fuel (SNF) and Greater-Than Class C (GTCC) Waste (Docket ID NRC-2016-0231)**

**General Comments**

The Texas Commission on Environmental Quality (TCEQ) is a unique Texas stakeholder as we have subject matter expertise, but no regulatory authority over the licensing of this proposed consolidated interim storage facility (CISF). This authority resides with the federal government, specifically the Nuclear Regulatory Commission (NRC).

The TCEQ has significant policy concerns as they pertain to the adjacent low-level radioactive waste disposal facility. The CISF proposal has unprecedented implications as it has created significant unease with the public. Continuing with this licensing action jeopardizes public consent and presents significant challenges as we carry out our responsibility to regulate the low-level radioactive waste disposal facility.

**Specific Comments**

1. **Page 2-2, Line 4** – The EIS states “In its license application, ISP has requested that NRC license the proposed CISF to operate for a period of 40 years (ISP, 2020). ISP stated that it may seek to renew the license for an additional 20 years, for a total 60-year operating life (ISP, 2020). Renewal of the license beyond an initial 40 years would require ISP to submit a license renewal request, which would be subject to an NRC safety and environmental review at that time.”

**Comment:** The TCEQ understands that the initial licensing period for a CISF is 40 years with the ability for an additional renewal period of 40 years. Based on the requirements in 10 Code of Federal Regulations (CFR) Part 72, the applicant is only required to provide technical and design analyses for the term of the license being requested. Because 10 CFR Part 72 appears to only allow one 40-year license renewal term, how will the NRC ensure that interim storage does not extend beyond the second 40-year license term, or in this case a 20-year term? Since the U.S. Department of Energy has been unsuccessful in developing a permanent geologic repository, the TCEQ is concerned that a CISF in Texas will become the permanent solution for dispositioning the nation’s spent nuclear fuel (SNF).

2. **Page 2-2, Line 9** – The EIS states “By the end of the license term of the proposed CISF, the NRC staff expects that the SNF stored at the proposed facility would have been shipped to a permanent geologic repository. This expectation of repository availability is consistent with the NRC’s analysis in Appendix B of NUREG-2157, “Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel,” (NRC, 2014). In that analysis, the NRC concluded that the reasonable period for the development of a repository is approximately 25 to 35 years (i.e., the repository is available by 2048) based on experience in licensing similarly complex



facilities in the United States and national and international experience with repositories already in progress (NRC, 2014).

**Comment:** The NRC did not address an alternative or contingency for stored SNF in the event that a permanent geologic repository is not developed and licensed at the end of a CISF license term. The assumption is speculative and may result in the State of Texas becoming the permanent solution for disposition of SNF.

3. **Page 2-2, Line 36** - The EIS states “The Federal Waste Disposal Facility. This facility serves the U.S. Department of Energy 36 (DOE) and is also authorized to dispose Class A, B, and C LLRW and Mixed Low-Level Waste (MLLW) under Texas Radioactive Materials License No. R04100, Amendment No. 30 (TCEQ, 2016a).”

**Comment:** The Federal Waste Disposal Facility is authorized to receive both LLRW and MLLW. The MLLW is authorized by both Radioactive Material License R04100 and Hazardous Waste Permit No. 50397. The TCEQ respectfully suggests revising to add the hazardous waste permit number.

4. **Page 2-7 line 10** - “Southeastern” does not match the location of Phase 1 on Figure 2.2-5.

**Comment:** Suggest revising location to match Figure 2.2-5.

5. **Page 2-10 line 16** - Description of rail car movement in “Rail Sidetrack” paragraph does not match Figure 2.2-1 and Figure. 2.2-5.

**Comment:** Suggest revising paragraph to match Figures 2.2-1 and 2.2-5.

6. **Page 4-22 line 36** - Reference to “town of Deaf Smith, Texas” should be “county of Deaf Smith, Texas.”

**Comment:** Suggest revising reference to read county instead of city.

# Tab 62

**From:** Kerster, Courtney, GOV <Courtney.Kerster@state.nm.us>  
**Sent:** Wednesday, November 4, 2020 10:10 AM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] RE: Comments from Gov Lujan Grisham  
**Attachments:** CISF ISP Letter MLG.pdf

Apologies, here is the correct format.

---

**From:** Kerster, Courtney, GOV  
**Sent:** Wednesday, November 4, 2020 10:09 AM  
**To:** WCS\_CISF\_EIS@nrc.gov  
**Subject:** Comments from Gov Lujan Grisham

Please see the attached letter from Governor Michelle Lujan Grisham.

Thank you,  
Courtney

Courtney Kerster  
Director of Federal Affairs  
Office of Governor Michelle Lujan Grisham  
444 North Capitol St NW, Suite 411  
Washington DC 20001  
Office: 202-624-3667  
Cell: 505-690-7964  
[courtney.kerster@state.nm.us](mailto:courtney.kerster@state.nm.us)

**Federal Register Notice:** 85FR27447  
**Comment Number:** 10392

**Mail Envelope Properties** (e199eeef6dca4142be9f1a436f2ab71e)

**Subject:** [External\_Sender] RE: Comments from Gov Lujan Grisham  
**Sent Date:** 11/4/2020 10:10:09 AM  
**Received Date:** 11/4/2020 10:10:19 AM  
**From:** Kerster, Courtney, GOV

**Created By:** Courtney.Kerster@state.nm.us

**Recipients:**

**Post Office:** MBXCAS002.nmes.lcl

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
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CISF ISP Letter MLG.pdf	65065	

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

**C.I. 1295**

001118



## State of New Mexico

Michelle Lujan Grisham  
*Governor*

November 3, 2020

Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Program Management, Announcements and Editing Staff

Submitted by email to: [WCS\\_CISF\\_EIS@nrc.gov](mailto:WCS_CISF_EIS@nrc.gov)

Dear Sir or Madam,

As the Governor of the State of New Mexico, I write to express my opposition to the proposed action to issue a license in response to the Interim Storage Partners (ISP) LLC's License Application for a Consolidated Interim Storage Facility (CISF) for Spent Nuclear Fuel (SNF) in Andrews County, Texas. The May 2020 draft Environmental Impact Statement (EIS) is significantly flawed and does not adequately address significant threats to the health and safety of New Mexicans, impacts to our economy, and protection of our environment.

The U.S. Nuclear Regulatory Commission (NRC) proposed approval of the ISP license application to construct and operate a CISF for SNF and Greater-Than-Class C waste and spent mixed oxide fuel at the existing Waste Control Specialists (WCS) site in Andrews County, Texas. If licensed, the facility could store up to 5,000 metric tons of uranium (MTUs) for a license period of 40 years. ISP has indicated that they will seek amendments and extensions of the license to store an additional 5,000 MTUs for each of seven expansion phases over 20 years, resulting in an expanded facility with total storage of up to 40,000 MTUs of spent nuclear fuel.

New Mexicans have a vested interest in this proposed action due to the proximity of the site to the Texas-New Mexico border; the facility is located just .37 miles east of the border and five miles east of Eunice, New Mexico. Additionally, the New Mexico side of the border is more densely populated, meaning that the proposed action would disproportionately impact New Mexicans in the immediate area.

The draft EIS does not adequately address the many safety concerns that siting a CISF in Andrews County, Texas raises. With no active planning for a permanent repository for SNF underway, there is significant risk that this and other facilities proposed as interim storage

facilities become de facto permanent repositories. Over time, it is likely that the casks storing spent nuclear fuel and high-level waste will lose integrity and will require repackaging. Any repackaging of spent nuclear fuel and high-level waste increases the risk of accidents and radiological health risks. The consequences of a release of radiation due to accidental events (such as fire, flood, earthquakes, ruptures of fuel rods, explosion, lightning, extreme temperatures and more), potential acts of terrorism or sabotage, and the risks associated with aging spent nuclear fuel canisters all pose unacceptable health, safety, and environmental risks that the draft EIS fails to address.

Further, the ISP project would place unfunded safety mandates on local communities. Transporting spent nuclear fuel across the nation is complex and extremely dangerous. Safe transportation of spent nuclear fuel requires both well-maintained infrastructure and highly specialized emergency response equipment and personnel that can respond quickly to an incident at the facility or on transit routes. New Mexico residents cannot afford and should not be expected to bear the costs associated with transporting material to the proposed CISF or responding to an accident on transport routes or near the facility.

The proposed CISF also poses unacceptable economic risk to New Mexicans, who look to southeastern New Mexico as a driver of economic growth in our state. New Mexico's agricultural industry contributes approximately \$3 billion per year to the state's economy, \$300 million of which is generated in Eddy and Lea Counties, adjacent to the West Texas site. Further, the site is located in the Permian Basin, which is the largest inland oil and gas reservoir and the most prolific oil and gas producing region in the world. New Mexico's oil and natural gas industry contributed approximately \$2 billion to the state last year, driven by production in Lea and Eddy County. Any disruption of agricultural or oil and gas activities as a result of a perceived or actual nuclear incident would be catastrophic to New Mexico, and even taking steps toward siting a CISF in the area could cause a decrease in investment in two of our state's biggest industries.

Recognizing the risks outlined above, a broad range of businesses, state, local, and tribal leaders have expressed their opposition to this project and to a similar project in New Mexico proposed by Holtec International. That opposition includes both myself and Governor Abbott of Texas, who similarly recognizes the risk a CISF in this region poses to Texas residents.

The ISP proposal poses unacceptable risk to New Mexico's citizens, communities, and economy, and I urge you to deny the ISP license application.

Sincerely,



Michelle Lujan Grisham  
Governor

# Tab 63

**From:** McDill, Teresa, NMENV <Teresa.McDill@state.nm.us>  
**Sent:** Tuesday, November 3, 2020 4:10 PM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] Comments on Docket ID NRC-2016-0231  
**Attachments:** 2020-11-03 - OOTS NEPA Review Interim Storage Partners (Final).pdf

Good Afternoon,

Please see New Mexico Environment Department's attached comments on draft Environmental Impact Statement for Interim Storage Partners' application for a license to construct and operate a consolidated spent nuclear fuel storage facility in Andrews County, Texas.

Thank you,  
Terry

Teresa L. McDill, Manager  
Office of Strategic Initiatives  
New Mexico Environment Department  
1190 S St Francis Drive, Suite N-4050  
Santa Fe, NM 87505  
Phone: 505-827-2892, Cell: 505-469-0732  
[Teresa.McDill@state.nm.us](mailto:Teresa.McDill@state.nm.us)  
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Twitter @NMEnvDep #IamNMED

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**Federal Register Notice:** 85FR27447  
**Comment Number:** 10322

**Mail Envelope Properties** (5b873c80a9dc4cb19d9b3d6a7321f8a2)

**Subject:** [External\_Sender] Comments on Docket ID NRC-2016-0231  
**Sent Date:** 11/3/2020 4:10:18 PM  
**Received Date:** 11/3/2020 4:10:44 PM  
**From:** McDill, Teresa, NMENV

**Created By:** Teresa.McDill@state.nm.us

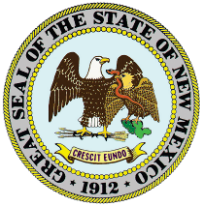
**Recipients:**

**Post Office:** MBXCAS003.nmes.lcl

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>	
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2020-11-03 - OOTS NEPA Review Interim Storage Partners (Final).pdf			406720

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**



**NEW MEXICO  
ENVIRONMENT DEPARTMENT**



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**Michelle Lujan Grisham**  
Governor

**James C. Kenney**  
Cabinet Secretary

**Howie C. Morales**  
Lt. Governor

**Jennifer J. Pruett**  
Deputy Secretary

November 3, 2020

Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATTN: Program Management, Announcements and Editing Staff

Submitted by email to: [WCS CISF EIS@nrc.gov](mailto:WCS_CISF_EIS@nrc.gov)


Dear Sir or Madam,

On behalf of the New Mexico Environment Department (NMED), attached please find comments on the May 2020 draft Environmental Impact Statement (EIS) for the Interim Storage Partners LLC's (ISP's) License Application for a Consolidated Interim Storage Facility for Spent Nuclear Fuel in Andrews County, Texas.

As discussed in our attached technical comments, the ISP site is on the New Mexico-Texas border, and NMED is very concerned that contaminants released to air and water at the site will migrate into New Mexico and create threats to human health and the environment.

Please do not hesitate to contact me to discuss further.

Sincerely,

 Digitally signed by James Kenney  
Date: 2020.11.03 10:59:08 -07'00'

James C. Kenney  
Cabinet Secretary  
Environment Department

Attachment (1)

cc: Courtney Kerster, Director of Federal Affairs, Office of Governor Michelle Lujan Grisham  
Sara Cottrell Propst, Cabinet Secretary, Energy Minerals and Natural Resources Department  
Sandra Ely, Director, NMED Environmental Protection Division  
Rebecca Roose, Director, NMED Water Protection Division  
Stephane Stringer, Director, NMED Resource Protection Division

**C.I. 1386**

## Comments

### **Introduction**

The U.S. Nuclear Regulatory Commission (NRC) proposes approval of the Interim Storage Partners, LLC (ISP) license application to construct and operate a consolidated interim storage facility (CISF) for spent nuclear fuel (SNF) and Greater-Than-Class C waste and spent mixed oxide fuel at the existing Waste Control Specialists (WCS) site in Andrews County, Texas, very close to the New Mexico state line. The NRC proffers a draft environmental impact statement (EIS)<sup>1</sup> to support the proposed action, which would authorize storage of up to 5,000 metric tons of uranium (MTUs) for a license period of 40 years. The ISP admits it will seek amendments and extensions of the license to store an additional 5,000 MTUs for each of seven expansion phases over 20 years, resulting in an expanded facility with total storage of up to 40,000 MTUs of SNF. New Mexico opposes the proposed action as the EIS is significantly flawed, and the proposed action presents threats to the health and environment of New Mexico and its citizens.

The New Mexico Environment Department (NMED) has considerable experience and interaction with the WCS facility, due to its location along the Texas-New Mexico border, and is familiar with the operations and environmental issues of this site. Furthermore, prevailing wind direction is generally from the proposed site towards New Mexico, groundwater flow beneath the existing waste cells at the site is predominantly to the southwest towards New Mexico, and surface water flow from the site is directed through outfalls that flow directly into New Mexico.

Contaminants released to air and water at the ISP site, therefore, have the potential to migrate into New Mexico and create threats to human health and the environment. As a result of the potential for existing operations at the WCS site to affect groundwater quality in New Mexico, NMED required WCS to obtain a Groundwater Discharge Permit (DP-1817) for WCS's waste disposal operations in Texas. WCS submits groundwater monitoring reports to NMED as required by DP-1817 and is currently in compliance with DP-1817.

Overall, the technical analysis in the draft EIS is inadequate and does not support the proposed alternative. The EIS fails to properly characterize the site, which is geologically unsuitable. Similarly, the numerous technical site deficiencies preclude thorough evaluation of the site or the proposed project. Furthermore, the draft EIS lacks all applicable state regulatory oversight and environmental impact controls. Additionally, the draft EIS omits a full assessment of environmental justice concerns or analysis of the effects of the proposed project. These deficiencies all contribute to a draft EIS that fails to meet the requirements of Section 102(2)(c) of the National Environmental Policy Act (NEPA). New Mexico disagrees strongly with the recommended action of approving the Interim Storage Partners LLC's License and recommends the No Action Alternative.

### **1. Moving SNF multiple times creates unnecessary risks to public health, safety, and the environment.**

The NRC stated in its Waste Confidence Decision<sup>2</sup> that SNF can be stored safely beyond the operating life of a power reactor, at current locations, until a national repository for SNF is established. Moreover, states and regional groups have consistently supported moving fuel only once – from current locations to a national repository. As this project proposes a temporary solution

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1 EIS download: <https://www.nrc.gov/docs/ML2012/ML20122A220.pdf>.

2 SECY-14-0072: Final Rule: Continued Storage of Spent Nuclear Fuel (RIN 3150-AJ20)  
<https://www.nrc.gov/docs/ML1417/ML14177A474.pdf>.

to a permanent problem, the SNF of concern may need to be moved multiple times until a permanent solution is established. Ultimately, moving SNF multiple times increases the likelihood of accidents within the State of New Mexico and elsewhere.

## **2. The proposed ISP CISF site is geologically unsuitable.**

Given that a permanent repository for high-level radioactive waste does not exist in the United States and there is no existing plan to build one, any "interim" storage facility will be an indefinite storage facility, including ISP's CISF. The license life for the application ISP submitted to the NRC is for forty (40) years, and the license life can be extended at every license renewal date. The design life for the storage facility and cask, canisters, and assemblies is for eighty (80) years. The service life for the SNF storage site is one hundred and twenty (120) years. At this time, the NRC cannot guarantee that a permanent repository for SNF in the United States will be developed in 40, 80, or 120 years, or that the proposed ISP CISF facility will not become a permanent repository. Even 80 years of storage at the ISP CISF amounts to impacts beyond the lifetimes of everyone involved in this environmental review and licensing decision.

As early as the 1950s, the National Academy of Sciences recommended disposal of long-lived radioactive wastes in deep, geologically stable formations.<sup>3</sup> ISP, however, proposes to store highly radioactive and toxic SNF at the surface in an area that is underlain by shallow groundwater. ISP's proposed CISF site does not provide deep geologic isolation for indefinite SNF storage, and the proposed site is unsuitable for SNF storage over a period of decades. Therefore, the No Action Alternative is recommended.

## **3. The draft EIS contains numerous technical deficiencies that preclude a thorough evaluation of the radiological and non-radiological environmental impacts of the proposed ISP facility.**

Resolving technical deficiencies in the draft EIS and properly evaluating, with all available data, the description of the affected environment, waste transportation, waste characterization, potential contaminant release mechanisms and exposure pathways, potential risks from aging SNF canisters, and site monitoring will further support the No Action Alternative.

### **a. Deficiencies Related to Hydrogeologic Characterization**

The draft EIS does not contain a comprehensive and internally consistent hydrologic conceptual site model that includes precipitation, recharge, surface water, groundwater and springs. Moreover, the draft EIS fails to identify and characterize all groundwater zones that underlie the site with regard to background water and sediment quality, potentiometric surfaces, and directions of groundwater flow. Of particular concern is that the draft EIS does not identify the source of water in Baker Springs in New Mexico, and whether these springs could be affected by contaminant discharges at the proposed ISP site.

These deficiencies preclude the complete and thorough evaluation of contaminant release scenarios, the resulting migration and exposure pathways, and the resulting risks to human and ecological health.

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<sup>3</sup> National Research Council. 1957. The Disposal of Radioactive Waste on Land. Washington, DC: The National Academies Press. Available at <https://doi.org/10.17226/10294>.

**b. Deficient Evaluation of Potential Contaminant Release Scenarios and Exposure Pathways**

Prevailing wind direction is generally from the proposed site towards New Mexico. Groundwater flow beneath the existing waste cells at the site is predominantly to the southwest towards New Mexico. Surface water flow from the site is directed through outfalls that flow directly into New Mexico. The draft EIS fails to evaluate how contaminant releases to these pathways could directly migrate into, and impact public health and the environment in, New Mexico.

**i. The draft EIS fails to evaluate the impacts of a radiological release from a proximal facility.**

ISP's Environmental Report, in a section titled Proximity of Hazardous Operations/High-Risk Facilities, erroneously states "*there are no facilities handling large quantities of hazardous materials, chemicals, or other material in proximity to the site.*" (See § 2.3.4, Criterion 13, page 2-27). Numerous radiological materials operations are currently occurring in the vicinity of the CISF and are likely to continue or expand in the future. These operations include the Federal Facilities Waste Disposal site, the Compact States Waste Disposal Facility, the By-Products Waste Disposal Facility, and the uranium enrichment occurring at URENCO. A radiological release from one of these proximal facilities could render the ISP CISF unmanageable, at loss of capability to function safely, and at risk for accidents and release of contaminants to the environment.

**ii. The draft EIS fails to evaluate the potential impacts of a hydrogen sulfide release from a proposed oil-field waste disposal facility near the site.**

ISP's Environmental Report, in a section titled Land Use, erroneously states that "there are no other know current, future, or proposed land use plans, including staged plans, for the proposed CISF or immediate vicinity." (See § 3.1, page 3-3). CK Disposal, however, has proposed to construct an oil field waste disposal facility near the ISP site. The draft EIS does not evaluate how releases of hydrogen sulfide from the CK Disposal facility could render the ISP CISF unmanageable, at loss of capability to function safely, and at risk for accidents and release of contaminants to the environment.

**iii. The draft EIS fails to evaluate the potential impacts of numerous boreholes on the ISP property that could act as pathways for contaminants to reach groundwater.**

Some 600 boreholes are known to be on the WCS property, and the draft EIS does not provide information on how many boreholes have been improperly abandoned. Improperly plugged or cased boreholes could cause a migratory pathway for contaminant migration to groundwater.

**c. Seismicity not Adequately Addressed**

The draft EIS asserts that operation of the proposed CISF project would not be expected to impact or be impacted by seismic events. The draft EIS provides general information about the history of earthquakes in the region, including earthquakes caused by fluid injection by the oil and gas industry, and asserts that CISF infrastructure will be designed to withstand seismic events, but does not provide specific information about these safeguards. On March 26, 2020, a

magnitude 5.0 earthquake struck West Texas near the New Mexico border.<sup>4</sup> Since earthquakes of magnitude 5 or greater have already occurred in this area, there is the possibility that more powerful earthquakes may occur, and the ISP facility must be designed to withstand these more powerful seismic events.

**d. Deficient Waste Characterization**

The draft EIS fails to provide details of the radionuclides and activities in the spent fuel rods, and only references metric tons of uranium (MTU) in the fuel rods that were originally placed in the nuclear reactors. Spent fuel rods can be much more radioactive than the original fuel rods due to the presence of a mixture of byproducts from uranium fission. Radionuclide activities in spent fuel rods can depend on age, uranium burnup and decay, and the type of reactor that was used.

Furthermore, the draft EIS does not adequately address the differences in SNF storage (pool storage, dry storage or both) at the commercial reactor sites. These differences are important as they may present challenges for SNF processing and storage at the proposed ISP facility.

The draft EIS fails to discuss non-radiological contaminants that may potentially be discharged to soil, water and air during operation of the site.

**e. Deficiencies Regarding Cannisters and CISF Infrastructure**

**i. SNF cannisters**

Some of the SNF cannisters that would be shipped to the proposed ISP facility have already been stored for decades. As fuel rods age they are subject to corrosion, damage or cladding, and the potential for explosive levels of hydrogen to build up inside the cannisters. The draft EIS does not adequately address these issues.

The SNF cannisters will be stored on concrete pads on the ground surface exposed to the elements. The draft EIS does not address the temperature rating of the SNF cannisters and if maximum summer temperatures at the site are within this temperature rating.

**ii. SNF Concrete Pad**

The draft EIS does not discuss how the concrete pads used to store SNF cannisters will be protected or repaired from cracking and spalling due to exposure to the elements of the arid Southwest.

**4. The draft EIS is significantly incomplete without inclusion of all applicable state regulatory oversight and environmental impact controls.**

The draft EIS fails to identify New Mexico water quality regulatory requirements that apply to the proposed ISP facility. As discussed above, contaminants discharged by existing WCS operations, as well as by proposed ISP operations, have the potential to affect water quality in New Mexico. Discharges onto or below the ground surface at the site, and surface water emanating from the site that flows toward New Mexico, have the potential to infiltrate into the subsurface and into groundwater. Consequently, NMED required WCS to obtain a Groundwater Discharge Permit (DP-1817) for WCS's waste disposal operations. WCS submits groundwater monitoring reports to NMED as required by DP-1817 and is currently in compliance with DP-1817.

The existing Texas Pollutant Discharge Elimination System (TPDES) Permit, and monitoring conducted pursuant to that permit, is not an adequate substitute for New Mexico's groundwater permitting and monitoring requirements. Therefore, ISP must submit a Notice of Intent to Discharge

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<sup>4</sup> <https://www.usgs.gov/news/m50-earthquake-hits-west-texas-new-mexico-border>.

to NMED in accordance with 20.6.2.1201 New Mexico Administrative Code (NMAC) for proposed CISF operations. The final EIS, and specifically Table 1.6-1, must identify DP-1817, and ISP's requirement to submit a Notice of Intent to Discharge.

Since surface water discharges from the proposed ISP site in Texas may affect surface water quality in New Mexico, the final EIS should include a requirement that the Texas Commission on Environmental Quality consults with NMED as a downstream state during the TPDES Permit process.

The draft EIS fails to commit the NRC to a comprehensive environmental oversight role during operation of the CISF. The final EIS must address possible licensing conditions and the NRC's obligation to evaluate and respond to adverse impacts to environmental media, e.g., soil, surface water, groundwater.

**5. The proposed action threatens minority and low-income populations in New Mexico that have already suffered disproportionately high adverse human health and environment effects from nuclear energy and weapons programs of the United States. The Proposed Action must comply with Executive Order 12898 requiring that all federal agencies achieve environmental justice for vulnerable populations that would be disproportionately affected by programs of the United States.**

The proposed action for indefinite storage of commercial SNF joins the ranks of uranium mining and milling, legacy contamination at national laboratories, and disposal of defense waste at the Waste Isolation Pilot Plant (WIPP), all of which have long presented risks to public health and the environment in the State of New Mexico that are disproportionately greater than such risks to the general population of the United States.

The draft EIS identifies 58.8 percent of the population in Lea County, New Mexico as Hispanic or Latino (Table 1). New Mexico's general percentages of minority (Hispanic or Latino and American Indian) and low-income populations are significantly greater than in the United States' general population (Table 1).

**Table 1. New Mexico and United States Demographics.**

Demographic	United States <sup>a</sup>	New Mexico <sup>a</sup>	Lea County, NM <sup>b</sup>
Hispanic or Latino	18.3%	49.1%	58.8%
American Indian	1.3%	10.9%	0.7
Persons in poverty	11.8%	19.5%	
Sources:			
<sup>a</sup> U.S. Census Bureau QuickFacts: <a href="https://www.census.gov/quickfacts/fact/table/US/PST045219">https://www.census.gov/quickfacts/fact/table/US/PST045219</a>			
<sup>b</sup> Draft EIS, Table 3.11-2, <a href="https://www.nrc.gov/docs/ML2012/ML20122A220.pdf">https://www.nrc.gov/docs/ML2012/ML20122A220.pdf</a> .			

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, February 11, 1994, stated that "... 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,

NEW MEXICO ENVIRONMENT DEPARTMENT

INTERIM STORAGE PARTNERS LLC'S, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR NRC LICENSE APPLICATION COMMENTS

NOVEMBER 3, 2020

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*and activities on minority populations and low-income populations of the United States.”<sup>5</sup> On August 24, 2004, the NRC issued a Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions that stated “NRC believes that an analysis of disproportionately high and adverse impacts needs to be done as part of the agency's NEPA obligations to accurately identify and disclose all significant environmental impacts associated with a proposed action.”<sup>6</sup>*

The draft EIS fails to demonstrate that the Proposed Action will achieve environmental justice for the high percentage of minority and low-income populations in the State of New Mexico who have already suffered disproportionately high adverse human health and environmental effects from nuclear energy and weapons programs of the United States. In fact, the draft EIS (pp. 2-28, 2-29) makes repeated, yet unsubstantiated, assertions that the Proposed Action will result in “no disproportionately high and adverse human health and environmental effects.” Environmental justice deficiencies in the draft EIS include:

- a. Failure to identify and evaluate the cumulative history of adverse human health and environmental effects on New Mexico’s vulnerable populations; and
- b. Failure to quantify specific impacts and health consequences to vulnerable populations in New Mexico that might occur from the various accidents and release scenarios considered in the draft EIS.

The environmental justice deficiencies in the draft EIS must be corrected by preparation of a proper risk assessment that evaluates all potential release scenarios and that quantifies incident-specific and cumulative impacts to vulnerable populations in New Mexico. In accordance with Executive Order 12898, with Council on Environment Quality guidance, and with NRC policy, every aspect of the proposed action must provide the highest level of protection to New Mexico citizens, including use of Best Available Technology in these safeguards. Our concerns about disproportionate impacts are another reason why NMED supports the No Action Alternative.

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<sup>5</sup> <https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>

<sup>6</sup> <https://www.govinfo.gov/app/details/FR-2004-08-24/04-19305>



# Tab 64

**From:** Monica Perales <monicap@forl.com>  
**Sent:** Tuesday, November 3, 2020 9:07 PM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] Docket No. 72-1050 / NRC-2016-0231

In response to the ISP DEIS request for comments, I, Aaron Pachlhofer, wish to restate prior comments submitted to the NRC as well as additional comments regarding the threat of Cesium to the environment of West Texas and the Permian Basin.

- i. I hold the position of licensed geologist and geoscientist, Fasken Oil and Ranch, Ltd. (“Fasken”), located at 6101 Holiday Hill Road, Midland, Texas 79707 and am a member in good standing of the Permian Basin Land and Royalty Owners and Operators Coalition (“PBLRO”) and am duly authorized to execute this affidavit.
- ii. I have personal knowledge of the information as stated herein.
- iii. Fasken presently has lands and mineral interests within eighteen miles of the proposed WCS/ISP CISF located in Andrews County, Texas. The PBLRO presently has lands and mineral interests throughout Andrews County with the nearest member holding land and minerals within two miles of the proposed WCS/ISP CISF.
- iv. My name is Aaron Pachlhofer, and I am a licensed geologist and geoscientist. Since 2013, I have been employed by Fasken Oil & Ranch, Ltd. as Environmental Coordinator. In that capacity, my duties include primary management of all environmental policies, procedures, and programs for air, soil, and water concerns. My specific duties include coordination and oversight of all spill incidents, air permitting & air compliance, management of radiation issues, all regulatory interaction & notification, also management & oversight of environmental vendors. I have knowledge of and interpret, prepare comments on and ensure compliance with all new and current Federal, state, and local regulations under the U.S. Environmental Protection Act (“EPA”), the U.S. Bureau of Land Management (“BLM”), the Texas Rail Road Commission (“RRC”), the Texas Commission on Environmental Quality (“TCEQ”), the New Mexico Environment Department (“NMED”), and the State of New Mexico Oil Conservation Division (“NMOCD”). Additionally, I monitor legislation, regulations and ensure compliance with any protected, threatened and endangered species program requirements.
- v. In my previous employment, my responsibilities involved environmental regulatory compliance, program management, emergency response, environmental assessments, groundwater monitoring, remediation and environmental data gathering and analysis.

- vi. I was awarded the B.S. in Geology in 1998 and the M.S. in Geology in 2004 from Sul Ross State University, Alpine, Texas.
- vii. In 2003, I received and have maintained a Geologist/Geoscientist license from the State of Texas.

The sections below provide my professional analysis of the WCS/ISP license application and erroneous analysis of the environment of the proposed CISF including WCS/ISP's contradictory statements regarding the occurrence and movement of groundwater at and beneath the proposed CISF and a failure to appreciate the hydrologic process.

**I. SPECIFIC CONCERNS REGARDING ISP'S APPLICATION DOCUMENTS**

**1. In ISP's response to RAI WR-6, they provide new details regarding the presence of groundwater in the northern portion of the CISF and discloses reliance upon insufficient boring data provided by WCS.**

- A. In responding to RAI WR-6, ISP admittedly erred in relying upon WCS' groundwater data. ISP reports that erroneous information which admittedly was "not based on sufficient boring data to distinguish the contacts between the Antlers and the Ogallala in the proposed CISF area, nor between the Antlers and the Gatuna on the south side of the ridge," misled ISP into previously reporting the lack of presence of groundwater. In updating their report as to the presence or absence of groundwater, ISP reveals that one to five feet of groundwater is present in the northern portion of the CISF site. This new information more closely corresponds with earlier statements made by Fasken and the Permian Basin Coalition in that there is now an admission that groundwater is present throughout the site and nearer the surface than had been stated by ISP.
- B. Based upon this new information, I argue that the goal post is constantly moving with ISP. Fasken and the Permian Basin Coalition have repeatedly asserted that cross-formational groundwater exists between the Ogallala and the Antler Formations and these two aquifers are situated beneath and all around the ISP CISF. As such, the application documents and the ISP DEIS are erroneous and fail to analyze the potential for radiological and other environmental impacts based on the siting of a CISF above multiple, cross-connected aquifers.

**2. ISP's response to RAI WR-11 is grounded in generalizations and is flawed.**

- A. In RAI WR-11, NRC Staff request that ISP identify the shallowest groundwater located beneath the proposed CISF footprint by name and depth below the CISF land surface, whether in the Antlers, Ogallala, Gatuna, or Cooper Canyon Formation. Further, Staff request that ISP name specific aquifers in the Dockum Group in the future and avoid "use of the lumped term 'Dockum Aquifer'" as it does not clearly denote the site-specific aquifer that is being referenced at the proposed CISF. Staff also instructs that near-surface groundwater formations be referred to by name. This request is made by Staff in

- accordance with 10 CFR 51.45(b) and (b)(1), which require that the Environmental Report include a description of the affected environment and an assessment of environmental impacts.
- B. In response, ISP downplays the presence of groundwater and utilizes generalizations where factual based evidence is required. When identifying the “shallowest groundwater located beneath the proposed CISF footprint by name and depth below the CISF land surface,” the response is nonresponsive. ISP answers, “The shallowest groundwater beneath the proposed CISF footprint is a few inches to a few feet of saturation in the undifferentiated Antlers/Ogallala sediments starting at the northern fence line of the Protected Area boundary in the northeast corner.” They go on to cite their joint venture member, Waste Control Specialists (WCS), as their reference source.
- C. In the instant matter, it is critical to avoid broad generalizations and, instead, rely upon evidence-based practice. It is also critical to rely upon scientific-based evidence that is substantiated. To cite WCS without the support of objective, admissible evidence or even so much as an affidavit is not in compliance with the clear standards of the industry.
- D. The low-quality response to RAI WR-11 presents new information regarding the presence of groundwater “a few inches” beneath the CISF footprint. This admission contradicts ISP’s previous ERs which fail to differentiate between water beneath WCS versus beneath the CISF. Instead, previous ERs simply state that the shallowest water bearing zone is about 225 feet deep at the WCS CISF. (WCS Consolidated Interim Storage Facility Safety Analysis Report. Rev. 2)
- 3. In responding to RAI-WR-5, ISP discusses potable water from 13 windmills (including the Letter B Ranch well) but does not discuss the groundwater wells located within a 10 km radius of the WCS site.**
- A. WCS conducted a water well search in 2007 using Banks Environmental Data Inc. The search identified 174 water wells drilled within a 10 km radius of the WCS landfill site (Table 3-1, Banks Survey). Approximately 20 of these water wells are at or near the WCS site (Figure 6-1). Most of these wells are open to formations less than 200’ deep, which indicates groundwater production is from the OAG aquifer unit. Water usage is for domestic, stock, irrigation, and commercial purposes (Table 3-1). These data clearly show that there is groundwater present within the CISF footprint. Table 3-1 and Figure 6-1 are within the Attachment WR-5-2.
- 4. ISP’s response to RAI WR-3 indicates that ISP has selectivity ignored or omitted groundwater data.**
- A. In their response to RAI WR-3, ISP discusses geochemical data from well TP-14 compared to water sampled from Baker Spring. ISP does not discuss the aquifer source of the water sample collected from TP-14, nor does ISP disclose the sampling location. ISP failed to collect groundwater samples and fails to provide geochemical data from all wells containing groundwater, especially wells containing groundwater that are located on the CISF, particularly PZ-47 and PZ-57.

**5. ISP's response to RAI WR-2 provides new details regarding playas.**

- A. ISP's response to RAI WR-2 acknowledges the presence of playas and reports that existing playas may be as much as "a few feet deep" and as large as a "few acres" in size. Although this generalization lacks the specificity called for in this type of licensing proceeding, this admission as to the size and depth of the playas is new information, which gives rise to a new contention.
- B. In responding to the RAI WR-2's request for additional detail on the surface water environment at and near the proposed CISF, ISP reports that there are localized wetland features such as playas and man-made excavations identified by the U.S. Fish and Wildlife Service (USFSW) at the surface of the WCS facility. ISP's admission that playas are present is not new information, however, the newly described size and depth of the playas presents new information that gives rise to a contention that the playas pose a possible contamination source for groundwater beneath the site. As stated in their Consolidated Interim Storage Facility Safety Analysis Report, Rev. 0 (2-18), "The primary sources of recharge to the Ogallala aquifer are playas." (WCS citing Blandford et al., (2003)[2-3]. ISP continually fails to recognize that playas are a direct connection to groundwater and nexus for contamination from the surface to groundwater beneath their site.
- C. Additionally, according to Texas Parks and Wildlife, playas serve as what has been described as the most important wetland habitat type for waterfowl. Failure to provide an objective, scientific study regarding migratory birds, butterflies and pollinators is poor conservation practice and gives rise to this contention that ISP has failed to provide adequate information regarding a conservation practice to demonstrate that they are engaged in managing and conserving playas that are a critical source of water for wildlife.

**II. ISP'S RESPONSE TO RAIs PRESENTS A SIGNIFICAT ENVIRONMENTAL ISSUE**

**1. ISP's new description of groundwater depth and presence creates a plausible contamination scenario.**

- A. According to Section 4.4 of ISP's ER, cask storage pads located at the CISF are "potential source[s] of low-level radioactivity that could enter runoff" throughout the operation of the CISF. ISP claims that the potential levels of radioactivity in rainwater runoff due to surface contamination of the dry casks would be "well below" the effluent discharge limits. ER Section 4.4 reasons that "the potential for negative impacts on surface water resources is very low due to lack of water presence and *formidable natural barriers to any surface or subsurface water occurrences.*" As it is now abundantly clear, the "formidable natural barriers" of the red bed clays no longer provide cover for the groundwater located "within

inches” of the CISF’s surface. ISP’s claim regarding potential levels of radioactivity in runoff is based on its erroneous description as to the presence and depth of groundwater. ISP must reevaluate the potential for groundwater contamination based on accurate, fact-based, present-day findings regarding groundwater. To do otherwise, poses a significant threat to the environment.

*i. Casks: Chloride-induced stress corrosion cracking (CI-SCC)*

Currently, Dry Storage Casks (DSCs) cannot be inspected once they are placed within their storage systems. The WCS/ISP facility is located within 26,000 square miles of the Salado Salt Formation that is replete with surface salt lakes and salt formation outcrops that critically contain magnesium chloride salts ( $MgCl_2$ ) that are the most reactive salt species for the induction and propagation of Chloride induced stress corrosion cracking (CISCC). The proposed CISF location is increasingly experiencing the “haboob” sandstorm phenomena that translocate tons of surface sediments for tens of miles. The historical paths of haboobs have included sweeping storms across the Salado surface salt flats in eastern New Mexico and West Texas.

Additionally, persistent fog and mist conditions are prevalent during the fall and winter in this region of the country. When combined, a single “salt deposition” event from a haboob, along with a sufficient amount of fog/mist event, could easily create the conditions that would initiate CISCC.

In the U.S. NRC draft report, “Identification and Prioritization of the Technical Information Needs Affecting Potential Regulation of Extended Storage and Transportation of Spent Nuclear Fuel,” the federal government recognizes the potential risk for monitoring dry casks and the “pitting and crevice corrosion” of the stainless steel canisters, which affect the safety functions of confinement, criticality, retrievability (of fuel from the dry storage canister), shielding (of radiation from people and the environment), and thermal (degradation of the fuel, potentially leading to fuel fires).

Further, the potential for stress corrosion cracking of welded stainless steel interim storage containers for spent nuclear fuel (SNF) has been identified as a high priority data gap by the Nuclear Waste Technical Review Board (NWTRB), the Electric Power Research Institute (EPRI), the Department of Energy (DOE) Fuel Cycle Research and Development (FCRD) programs and Used Fuel Disposition (UFD) campaign (Hanson et al, 2012) and the Nuclear Regulatory Commission (NRC 2012a; 2012b).

Little has been done to assess canister material properties and their impact on corrosion, especially localized corrosion.

In response to the numerous ways in which CISCC can occur and which are raised in this affidavit, WCS/ISP will likely argue that CISCC is an impossibility, or they may go so far as to claim that research is underway to increase understanding of the CISCC mechanism and to develop techniques for detecting CISCC in SNF canisters. However, a better understanding of the vulnerability of the canisters does not equate to a solution and is discordant to a continually progressing license application. Simply put, the SNF canister system which is meant to confine radioactive material is not proven to resist CISCC and is not, therefore, guaranteed to confine radioactive material.

*ii. Mitigating Controls upon a Release / Containment monitoring*

WCS/ISP has no way of inspecting the canisters once installed in the CISF. Currently, WCS/ISP has no plans to monitor the dry storage casks but only to perform occasional “leak tests of the accessible surfaces of the DSCs.” Additionally, WCS/ISP has no plans to monitor either DSC temperatures or airborne effluents that could emerge from a breached DSC. Once there is a breach, there is no way to repair a DSC or stop a DSC from leaking without first contaminating the facility and the environment. Without proven monitoring or inspection capabilities that i) are proactive in monitoring the entire DSC and not only occasionally and not only that small exposed portion of the partially buried DSC; ii) recognize areas of corrosion or vulnerability; and iii) have the capacity to properly repair susceptible DSCs, then it is impossible to argue that a significant environmental threat is not likely to occur.

**III. HAD ISP’S RESPONSE TO RAIs BEEN CONSIDERED INTIALLY, CONTENTION FOUR WOULD HAVE LIKELY BEEN ADMITTED**

**1. ISP has failed to provide accurate information describing the environment.**

A. NRC Regulation 10 CFR 51.45(b)(1) requires an applicant’s ER to “contain a description of the...environment affected, and discuss...the impact of the proposed action on the environment.” ISP has failed to satisfy this requirement. While ISP may have now provided a more accurate description of existing groundwater, the ER’s analysis of the impact on the environment is based on older, erroneous descriptions. Without an accurate description of the affected environment, a proper impact analysis cannot be made. All safety and environmental reports, data, and analysis based on ISP’s faulty descriptions of the environment, before the response to the RAIs had been made, should be criticized until ISP reevaluates the impact that the site will have based on the new descriptions provided in the response to RAIs.

- B. Until ISP reevaluates the impacts to groundwater, the site will continue to pose a serious contamination risk to the groundwater, and ISP will fail to satisfy the burden of 10 C.F.R. § 51.45(b)(1) to discuss the impact of the proposed action on the environment.
- C. Because ISP cannot satisfy its burden based on 10 C.F.R. § 51.45(b)(1) to discuss the impact on the newly described environment, amended Contention Four should likely be admitted.

ISP has stated that there is no risk of groundwater contamination. However it appears that ISP has not evaluated all of the chemical properties of the radiological products that will be stored in the dry casks. One of the primary daughter products of fission inside of a nuclear reactor is cesium (also spelled caesium) 137 with a half-life of 30.2 years. Cesium-137 is the primary contaminant of concern in the well known Chernobyl Exclusion Zone that was created after the 1986 nuclear reactor accident in the Ukraine. Cesium 137 is also widely found across most European countries as a result of the Chernobyl accident. Notably, cesium-137 has been detected in the food chain of wild game where all animals that are harvested (usually boar and reindeer) are required to be tested for radiation that resulted from Chernobyl. As a result of the cesium, the Chernobyl Exclusion zone will have to remain about the year 2,107.

According to the Agency for Toxic Substances and Disease Registry, cesium is the most reactive of the alkali metals and has a melting point of 83.1 degrees F. Cesium will readily combine with inorganics such as chloride or carbonate (both readily available in western Texas). With water, it creates cesium hydroxide which is the strongest base known to science. Cesium chloride is soluble in water at 1.87 kg/L, cesium carbonate at 2.1 kg/L, and cesium hydroxide at 4 kg/L. For perspective, sodium chloride is soluble in water at .36 kg/L according to the CRC Handbook of Chemistry and Physics (92<sup>nd</sup> ed). Cesium-137 has the ability to spread widely and rapidly into the environment once released. Cesium chloride and cesium carbonate are fine white solids that will transport quickly and easily with a small amount of wind. ISP has questioned how contamination might occur in the event that a dry cask might leak or rupture. However cesium compounds are easily transported by the wind and have high water solubility. Any cask breach or other accidental release would allow cesium to rapidly spread downwind (the wind always blows in west Texas). Once deposited onto a ground surface after wind transport, the cesium will dissolve into water with the first available precipitation event and begin infiltrating into the local water table where the cesium has fallen. Combined with the risk of cask breach by chloride induced stress corrosion cracking, ISP cannot be allowed to store the waste in west Texas.



**Federal Register Notice:** 85FR27447  
**Comment Number:** 10357

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**Sent Date:** 11/3/2020 9:07:03 PM  
**Received Date:** 11/3/2020 9:07:14 PM  
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**Created By:** monicap@forl.com

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001139

# Tab 65

# Official Transcript of Proceedings

## NUCLEAR REGULATORY COMMISSION

Title: Public Online Webinar for the Draft  
Environmental Impact Statement for the  
Proposed Interim Storage Partners  
Consolidated Interim Storage Facility

Docket Number: 72-1050

Location: webinar

Date: Thursday, October 15, 2020

Work Order No.: NRC-1102

Pages 1-188

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

+ + + + +

PUBLIC ONLINE WEBINAR FOR THE DRAFT ENVIRONMENTAL  
IMPACT STATEMENT FOR THE PROPOSED INTERIM STORAGE  
PARTNERS CONSOLIDATED INTERIM STORAGE FACILITY

+ + + + +

THURSDAY

OCTOBER 15, 2020

+ + + + +

The Meeting convened via WebEx, at 11:06  
a.m. EDT, Chip Cameron, Facilitator, presiding.

on our nuclear use and disposal of what we do use.

I appreciate again your time. Thank you very much.

MR. CAMERON: Okay. Thank you. Thank you, Elliot, for those comments, especially coming from a medical professional. And thank you again.

And, Terry, I believe Monica is the next speaker.

OPERATOR: Yes. We have Monica Perales next, and then, Richard Faidley, Erica Gray, and Lon Burnam.

And, Monica, your line is now open.

MS. PERALES: Yes, ma'am. Thank you.

Hello. My name is Monica Perales. I'm on the legal team representing Fasken Oil and Ranch and the Permian Basin Coalition.

First, let me say to Bruce, the commenter from Maryland, those of us out here with the target on our backs, we're Andrews County, not Anderson County.

Regarding the NRC and ISP DEIS, I continue to be disappointed in your failure to justify or even explain why you're in such a rush to license the CISF that you cannot put the public participation element on hold until this pandemic has passed and true public

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meetings can be held.

By engaging in the licensing of what's actually monitored retrievable storage and failing to take into account the position of the State of Texas, you are circumventing our rights, the rights of the State of Texas. You're most definitely aware that the Governor of the State of Texas has sent a letter to the President in which the State of Texas makes it clear that we are opposed to ISP's CISF. And let me clearer to you. Rick Perry may be invested in getting this facility licensed, but Greg Abbott is our Governor.

Now, regarding the DEIS section on environmental justice, in your rush to license the facility and your assumption of low risk, your DEIS failed to provide an objective and thorough analysis of impact to low-income and minority populations. In fact, you dismissed the large percentage of Spanish speakers in the immediate vicinity of the CISF and of the rail route.

I searched, and the NRC website public meeting notices are in English only, and the meeting notice in Andrews, Texas, in their small paper, it was only in English. So, if the DEIS is only published in English, why do you bother having an interpreter available, when the materials that are the subject of

this discussion are only available in English?

Your DEIS fails to accurately account for the salt playas and the environmental conditions out here in the area of the ISP that will contribute to chloride-induced stress corrosion cracking.

Your DEIS also presents a misleading view of the current tectonic state around the proposed site.

Besides the description of the tectonic uplift of the Central Basin Platform as it resides today, it describes the platform as being steeply fault-bounded uplift of basement rocks, and it describes the steep-angle faulting that bounds the platform's edges.

Now, while this description is true for the western flank of the platform, it fails to disclose the heavily faulted nature of the platform itself in and around the site. It fails to report on the cause of the platform's rotation, which is causing major deformation and instability within the platform itself. Due to the nature of the tectonic setting and the degree of rotation, the western side of the platform has greater structural relief, vertical separation, and basement shortening.

I'm trying to be brief, but what I have to say is important because it shows that the area of the ISP site is the least stable region of the Central

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Basin Platform from a structural geology standpoint, and it has undergone more fault reactivation in its history than the rest of the platform.

The DEIS describes the shallow faults in the area. However, most earthquake epicenters in the ISP site are at depths related to the basement faulting.

The risk in the area comes from reactivation of basement faults. They propagate energy faults at the surface, not like ordinary age faulting.

So, the DEIS is severely lacking. It is apparent that you chose to base your DEIS findings and focus your analysis on hazards that are lower risk to the site. Your omission of the obvious risk posed by basement faults voids your finding of low risk and it calls into question the reality of your results overall.

I'd like to discuss the probabilistic seismic hazard analysis utilized in the DEIS. The analysis that is used has been widely discounted by scientists and engineers for decades, as they include parameters known to conjure the constants in earthquake physics.

Major tectonic events have occurred in areas previously deemed low risk by your models. Your models cannot create an accurate risk of future



earthquakes. There are multiple scholarly, accredited sources that have discredited the models that you rely upon.

Your data is based on aboveground seismic monitoring stations, which are often moved. That leads to issues of effective measurement, the proper coupling to the earth, and local noise variations. The data reported in your DEIS has only been monitored since the 1970s. Yet, it's being used to determine seismic event risk up to 100 years into the future, or over two times the length of time that has been monitored.

The errors in the models cited in the DEIS are clearly known by the NRC, as you published internal documents discussing the large amount of uncertainties in these models. And you've gone as far as to clearly state that many of the problems with your models will not even be thought of, as they're so limited in scope.

Reliance upon WCS affidavits on basement faulting and your reliance upon faulting models for determining the degree of strength in the cask design, but also the site integrity itself warrants disqualification of your DEIS.

To the listeners, finally, I ask you to visit [protectthebasin.com](http://protectthebasin.com) and join us in opposition.

# Tab 66

**From:** Michael Lozano PBPA <Michael@pbpa.info>  
**Sent:** Wednesday, July 29, 2020 6:04 PM  
**To:** WCS\_CISFEIS Resource  
**Subject:** [External\_Sender] Docket No. 72-1050; NRC-2016-0231  
**Attachments:** PBPA Letter to NRC.pdf

Please see the attached letter from the Permian Basin Petroleum Association and feel free to let me know if you have any questions.

Best,

MDL

Michael D. Lozano  
Permian Basin Petroleum Association  
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**Federal Register Notice:** 85FR27447  
**Comment Number:** 2132

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001150





July 21, 2020

Re: Docket ID NRC-2016-0231; Docket ID NRC-2018-0052

To Whom It May Concern:

The Permian Basin Petroleum Association (PBPA) respectfully submits this letter for consideration by the Nuclear Regulatory Commission to express our concerns and opposition to the siting of the Interim Storage Partners Consolidated Interim Storage Facility Project (Docket ID NRC-2016-0231) and the Holtec International HI-STORE Consolidated Interim Storage Facility Project (Docket ID NRC-2018-0052) (collectively referred to herein as “facilities”), both within the Permian Basin of Texas and New Mexico. The PBPA takes the position that the Draft Environmental Impact Statements (Draft EIS) are inadequate as to the risk the facilities pose to impacts on the Permian Basin which is the most active, thriving and prolific oilfield in the United States.

The PBPA was founded in 1961 to advocate for the safe and responsible development of our nation's natural resources in the Permian Basin and we represents the interests of our local oil and gas operators in Texas, New Mexico, and Washington, D.C. Today we write you to defend that founding principle. While the PBPA fully supports an all-of-the above energy strategy for America, including nuclear energy, we have grave concerns that the siting of these facilities will jeopardize energy production. Our concerns with the proposals are not the generation of nuclear energy or the operations of current facilities in either state, but that the risk of the country's continued energy independence has not been adequately weighed against these projects to include the investment which substantially contributes to the Texas and New Mexico economic security and workforce development and retention.

The following information from the Texas Taxpayers and Research Association's report *“The Permian Basin: Enriching Texas,”* highlights the region's prominence in both oilfield production and state economic contributions. The Permian Basin comprises 26 percent of Texas' land area and is home to one of the thickest deposits of rock from the Permian Period (251 to 299 million years ago). It contains numerous oil and gas producing formations. In April 2019, Forbes Magazine named it the “World's Top Oil Producer,” replacing Saudi Arabia's Ghawar oilfield. With about 40,000 active oil and gas wells in New Mexico's portion of the Permian Basin and more than 250,000 in Texas' portion, the impact of the oil and gas sector is vast. **And it is proven.**

In 2019 in Texas alone, the Permian Basin was responsible for \$9 billion in severance taxes and royalties paid to the state to utilize widely in basic functions of government – that amounted to \$312 for every man, woman, and child in the state, or the equivalent of \$937 for a family of three. Absent

this revenue, the average Texan would either have had to accept a lower amount of services from state and local governments or would have had to pay that much more in taxes. In New Mexico, conservative estimates show that nearly 40% of all state revenue is generated directly from oil and gas production taxes. There is simply no way to over emphasize the importance of this region.

Our members firmly believe that authorizing these facilities would threaten the real value of the region through mineral extraction in order to establish an enterprise that has never been attempted, would warrant a greater and more thorough evaluation. For example, in New Mexico, much of the proposed siting would threaten already executed legal contracts for operators who, in good faith, invested in leasing the area for mineral exploration and development for oil and gas production. The Draft EIS does not consider mineral rights which are paramount to the success of an oilfield. The dismissal or negligent overlooking of these contracted agreements between government parties and private operators is a dangerous precedent that would never have the PBPA's support or hold up in a court of law.

Further, the concept of *interim storage* also concerns our members greatly. While we recognize the concerns of current spent nuclear fuel storage at reactor sites, that issue better begs the immediate approval of a permanent disposal facility, like was envisioned at Yucca Mountain, not moving the spent nuclear fuel twice – once to a consolidated interim storage facility and then again for final disposition. Without knowing the length of the timeline being considered as "*interim*" and the question of solvency for the private operators of these sites, our members firmly oppose the current license applications in Andrews County, Texas, and Eddy-Lea County, New Mexico.

We greatly appreciate your review of our comments and look forward to working with you to ensure that the Permian Basin remains America's Oilfield.

Sincerely,  
[s]  
Ben Shepperd  
President