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Comment Submission.

Barbara Warren

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November 18, 2018

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

Submitted via Rulemaking website
www.regulations.gov
email to WCS_CISF_EIS@nrc.gov

Docket ID NRC-2016-0231 Waste Control Specialists LLC's / ISP's Consolidated Interim Spent Fuel Storage Facility Project

Dear Ms. May Ma,

Focused Comments to the NRC regarding High Burnup Fuel and Transportation Issues

Introduction

Here we want to discuss major issues pertaining to High Burnup Fuel and Transportation. Planning for a major national transportation program will be necessary if CIS Facilities become a reality. We also want to note that the as-received-condition of spent nuclear fuel at the WCS/ISP CIS Facility, its assessment and proper handling will be impacted by the adequacy of the transportation program. Transportation should therefore be fully evaluated in the EIS.

We focus on two issues—High Burnup Fuel (HBF) and Transportation Issues. For these two issues we are providing our recommendations first, then we follow with supporting facts and rationale.

High Burnup Fuel Recommendations

1. **High Burnup Fuel (HBF) should be a subject thoroughly covered in the Environmental Impact Statement, unless HBF is ruled out for shipment until substantial research is completed, as detailed below.** There has been a failure of government agencies to substantively address the research recommendations of the US Nuclear Waste Technical Review Board (NWTRB) pertaining to HBF in their 2010 report.[1] The main topic of that report was extended dry storage of spent nuclear fuel. However, the Board had a lot to say about High Burnup Fuel. This fuel has significant transportation and safety implications including the receipt of damaged fuel at a CIS facility.

[1] US Nuclear Waste Technical Review Board, Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel, Dec. 2010.

2. **Launch Recommended Research Now.** Based on the notable deficiencies in the knowledge base pertaining to High Burnup Fuel, NRC and DOE should undertake to launch the extensive research recommended by the NWTRB in 2010.[2] The single research project related to HBF is long term with results not expected until 2026, too late for informing current plans for consolidated interim storage, a repository and transportation.

   Research could begin with HBF at Closed reactors—opening a selection of canisters of different burnups and different ages since removal from fuel pools and recording observations of the state of damage to fuel rods, temperature, pressure, and the presence of helium, etc. This would require use of a hot cell to control any potential releases of fission gases. Erica Bickford, PhD, DOE Transportation Manager has already completed 6 studies related to the assessment of logistics for moving Spent Nuclear Fuel (SNF) from closed reactor sites.[3]

3. **Monitoring for Helium is essential, but cannot be done for welded canisters.** Helium's presence is essential in dry storage for heat transfer and to prevent oxidation of fuel and other degradation mechanisms for cladding, particularly for HBF. However it can only be monitored in containers with lids. Welded canisters cannot be monitored and welds can leak. Research should evaluate the best methods to verify the presence of helium in dry storage systems.[4] Then monitoring for helium should be implemented nationwide on a regular basis.

4. **Use of Damaged Fuel Cans for HBF does not confine the release of fission gases** and should not be considered as "confinement." Damaged fuel cans have only screening that would capture large solid particles, not fission gases if there are ruptured fuel rods. HBUF has 3-4 times more curies than low burnup fuel.[5] The potential for release of fission gases at the WCS/ISP CIS facility is the primary health and safety issue that must be evaluated in the EIS.

5. **Research Needs for long- term management of HBF must be addressed.** Industry has focused primarily on research related to reactor performance. Government must require or independently address the needed research related to aging and long term management of HBF and new cladding materials in pools and dry storage.

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[2] Ibid. Research recommendations re: HBF are throughout the report.
[3] https://www.energy.gov/ne/downloads/initial-site-specific-de-inventory-reports
[4] NWTRB Report, 2010, p. 11
[5] Alvarez, Robert, Memorandum, Institute for Policy Studies, December 17, 2013.

Transportation Recommendations

1. **NRC previously required the presence of inert gas to be determined prior to SNF transport. Helium is most commonly used. Recently the NRC appears to be planning to modify the requirement to allow testing for inert gas presence upon arrival at a CIS facility. Given the serious contamination incident that justified the requirement for testing prior to transport, NRC needs to review this policy change. Rulemaking would have to occur to remove this requirement.**

2. **The EIS for the WCS/ISP CIS facility must include transportation issues, since they affect the receipt and handling of potentially damaged casks and canisters and radioactive releases. Transportation is an essential part of this application and the evaluation should not be segmented from the CIS facility application and EIS.** According to 10 CFR 72.108: "The proposed ISFSI or MRS must be evaluated with respect to the potential impact on the environment of the transportation of spent fuel, high-level radioactive waste, or reactor-related GTCC waste within the region."

3. **The Transportation analysis for the EIS should take into account the annual reports of the American Society of Civil Engineers and their assessment of the degraded infrastructure in the nation and in individual states.** All relevant transportation infrastructure should be evaluated along with the dollar amount needed to fix the existing long term backlog of degraded infrastructure. See ASCE discussion under Supporting Rationale-Transportation. No movements along routes should be planned until thorough review of the infrastructure takes place. Major necessary capital improvements may need years to complete prior to moving hazardous used nuclear fuel.

4. **A second category of transportation planning and funding are needed for the federal, state and local personnel involved in routine inspection and maintenance, emergency response planning and training for inspectors and emergency responders.**

5. **The National Transportation Safety Board has identified critical improvements that require implementation.** We cite two here that are particularly relevant for shipments of SNF. First is Positive Train Control that uses collision avoidance technology. All trains involving intercity passengers or commuter lines are to have this installed by Dec. 31, 2018, as are trains handling poison- or toxic-by-inhalation hazardous materials. This technology should be applied to SNF transport.

   The NTSB has also recommended the replacement of older tanker cars with newer models that have more features to protect against a catastrophic release of hazardous materials. Clearly SNF transport necessitates a dedicated train that is not hauling other hazardous or flammable materials.

   The NTSB has investigated rail accidents that point to inadequate track maintenance and inspections, as well as insufficient oversight and enforcement by federal inspectors. As a

result the NTSB has identified a need for focused attention on maintenance, inspection and repair for those routes handling hazardous materials.

6. **NRC dry storage and transportation regulations are not in alignment and should be updated, per the NWTRB.** For example, dry storage regulations reflect natural hazards and transport regulations do not. NRC should review NRC regulations for long term storage and transportation incorporating security concerns and using a risk informed approach.[6]

7. **Full scale tests of transportation casks may be needed according to the NWTRB** because modeling and semi-scale tests do not provide sufficient information to ensure cask integrity. [7]

8. **Eliminate High Burnup Fuel from Transportation Plans** until findings of new research can be reviewed and used in developing appropriate regulations. Any transportation plans should be restricted to Low Burnup Fuel.

9. **Do Not Allow More Mixing of HBF with Low Burnup Fuel in Dry Storage Canisters.** There is no factual basis for ensuring that the placement of HBF with Low Burnup fuel will not increase temperatures in hot spots to greater than 400 degrees Centigrade (the recommended temperature limit under normal conditions). Monitoring only applies to the entire canister, not to hotspots. Even if overall temperature limit is not exceeded, it could be exceeded in hot spots, affecting cladding and fuel and possibly leading to ruptured fuel rods.

10. **"Case by Case Analysis" for NRC transportation approvals cannot be scientifically adequate** given the major knowledge gaps pertaining to HBF and should be abandoned. For the transport of high-burnup fuel, ISG-11 (Rev. 3) notes that insufficient data currently exists to provide a solid basis for general safety criteria.[8] A "case by case analysis" cannot make up for an absence of knowledge.

11. **Adequate Transportation planning must be properly funded and address a myriad of relevant issues. A**dequate transportation infrastructure has been neglected for decades and requires large amounts of funding, and potentially several years to fix. The involvement of multiple parties at the national, state and local levels, including the public are needed for planning and evaluations, inspections, emergency planning, training for emergency responders, and ensuring security and terrorism issues have been addressed. Local knowledge must be incorporated in the planning, or late surprises will present difficulties. There is little evidence of such planning to date.

    DOE already made a terribly irresponsible decision in approving the transport of high level radioactive LIQUID waste to be transported from Chalk River, Canada to Savannah

[6] NWTRB 2010 Report, p. 16.
[7] Ibid, p.16
[8] Ibid, p. 38

River in the absence of an Environmental Impact Statement. Only solid radioactive waste had ever been transported previously.

Basic Facts

Current Amount of Spent Nuclear Fuel October 2017 [9]
Approx. 80,150 MTHM (metric tons heavy metal) of SNF in storage in the US today
25,400 MTHM in dry storage at reactor sites, in approximately 2,080 cask/canister systems
Balance in pools, mainly at reactors –54,750 MTHM
Approx. 2200 MTHM of SNF generated nationwide each year
Approximately 160 new dry storage canisters are loaded each year in the US

Spent Fuel Pools now have increasing amounts of Hi Burnup Fuel, because it is retained in the pools longer than low burnup fuel. It represents about one fourth of pool inventories and puts a greater heating load on cooling equipment.

Supporting Rationale- High Burnup Fuel

- **We know that High Burnup Fuel is more radioactive and operates at higher temperatures and pressures than Low Burnup Fuel.** These facts provide clues as to the differences between high and low burnup fuels. The most extensive research that identified substantial differences between HBF and Low Burnup Fuel involved 4400 measurements of commercial fuel rods irradiated in reactors around the world. The change in physical behavior of the cladding starts at about 45 GWd/MTU, the conventional value used to separate low and high burnup fuels.

  The Oxide Layer on the HBF cladding was found to be 2.5 to 3 times thicker than for LBF. Besides oxidation, hydrogen is absorbed by the Zircaloy metal and forms hydrides and can lead to embrittlement of fuel rods. The hydrogen content of the cladding was found to be about 2 times greater for High Burnup Fuel than for LBF. Residual water from incomplete drying process can provide both oxygen and hydrogen for these two types of degradation. Oxidation and hydrides also result in thinning of the metal cladding.[10]

- **However, beyond the above study there has been little research on High Burnup Fuel and our state of knowledge is very limited. It is primarily based on a single visual examination and characterization of commercial used fuel between the years 1999-2000; it was Low Burnup Fuel.**

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[9] Swift, Peter, "Recent Developments in Disposal of High-Level Radioactive Waste and Spent Nuclear Fuel, Oct. 2017 PowerPoint slide 7, Senior Scientist Sandia NL.
https://www.energy.gov/sites/prod/files/2017/11/f46/Peter%20Swift%20PRACoP%202017%20final.pdf

[10] NWTRB Report 2010, p. 54-56.

The NWTR Board reports on this effort at the Idaho National Engineering and Environmental Laboratory. "A Castor V/21 PWR canister type dry storage cask was selected to be opened. The used Low Burnup Fuel had been stored for 15 years. Results of the surveillance indicated that the reinforced-concrete storage-pad, the CASTOR V/21 cask, the cask components, and the used fuel were structurally sound and suffered no functional degradation of intended performance. Since this examination of fuel, the results have been used to help characterize the condition of stored used-fuel and cladding for storage and transportation certifications."[11] These results have also been used to model the behavior of high burnup fuel.

- **"Only limited references were found by the NWTRB on the inspection and characterization of fuel in dry storage, and they all were performed on low-burnup fuel after 15 years or less of dry storage.** Insufficient information is available on high-burnup fuels to allow reliable predictions of degradation processes during extended dry storage, and no information was found on inspections conducted on high-burnup fuels to confirm the predictions that have been made. The introduction of new cladding materials for use with high-burnup fuels has been studied primarily with respect to their reactor performance, and little information is available on the degradation of these materials that will occur during extended dry storage. Consequently, without any data for predicting how aging affects the fuel condition over longer storage periods, vendors model the condition of high burnup used fuel currently in storage on the basis of the limited series of examinations of fuel (low burnup) that have been performed to date. These also form the basis for predicting the behavior of used fuel during extended dry storage and normal handling and transport of used fuel and in the event of transportation accidents."[12]

- "**The findings of the technical literature suggest that active degradation mechanisms continue during the storage period on all aspects of the storage system that are not fully understood.** Consequently, the condition of the used fuel upon transport cannot be reliably predicted. This is especially true for high-burnup fuels currently in use and the new cladding and fuel assembly structural materials now being introduced. Additionally, once the used fuel is eventually shipped to either a repository or a waste processing facility, it is not clear that the used fuel will arrive undamaged, so the possibility exists that special precautions will need to be taken prior to opening the sealed canisters most likely in hot cells." [13]

- **NWTRB Summary "The objectives of NRC regulations for storage and handling of used nuclear fuel are aimed at ensuring that the used fuel that is stored in dry cask storage systems does not suffer damage or degradation during storage, handling or retrieval.** This is largely accomplished by maintaining a helium cover gas in the canister and assuring a fixed geometric arrangement of the used fuel to provide assurance of maintaining a subcritical configuration should water enter the cask during some accident situation. Licenses have historically been granted for initial 20-year terms. NRC has

[11] NWTRB Report, 2010, p. 58
[12] Ibid, p. 11.
[13] NWTRB Report, 2010, Abstract, p. 16.

recently extended the license period to a total of 60 years. Uncertainties about the behavior of high burnup fuels for which there is sufficient data to establish criteria requires case by case reviews. Once in storage, there is no opportunity for inspection of the used fuel and canister. Monitoring is limited to inspection of cooling vents, dose readings and temperature. Physical inspections of canisters or used fuel may be required to confirm model predictions. While the opportunity of degradation of used fuel decreases with decreasing temperature, the assumption of helium presence is important to support the results of long-term storage analyses. When the NRC published the initial storage criteria, they were written for periods of 20 years; it is not clear whether the same criteria or requirements are sufficient for very long-term storage (more than 120 years) as not all degradation mechanisms have been modeled especially for high-burnup fuels."[14]

- **Empirical knowledge or validation of modeling is needed for HBF.** The NWTRB discussed two approaches theoretical/ modeling/validation path and the empirical/ observational path. "Scientists and engineers are sometimes more confident in their predictions than the subsequent results would indicate, and for this reason validation exercises are necessary."[15] The Board previously questioned modeling based only on low burnup fuel. The Board recommended ongoing research studies that select high burnup fuel canisters to open and examine the condition of fuel, cladding and the canister itself for signs of degradation over time.

- **Analysis of Dry Storage Systems**
  "A complete analysis of the state of the dry-storage system requires that each critical component be analyzed separately as to how the component may age or deteriorate with time…." This is usually too specialized and detailed to analyze fully. "Instead, the approach chosen is to consider key components and combinations of scenarios and conditions that either can lead to a performance "failure" or the overall uncertainty involved is high, meaning expert confidence is low that the component will perform its function or perform safely under the combined set of scenarios and conditions considered. The most obvious key component is the thin-walled metal canister, which houses the used-fuel assemblies and the inert helium atmosphere that limits internal corrosion and other oxidation processes and facilitates heat transfer."

  "Of the two general types of storage systems, the thin-walled, concrete-shielded storage systems with welded lids seems the most likely to be breached by corrosion mechanisms. In particular, austenitic stainless steel may be vulnerable to stress corrosion cracking (SCC) under certain circumstances. It is important to prevent penetration through the wall by SCC allowing for the loss of the helium cover gas that would initiate additional degradation mechanisms of the fuel cladding and used fuel-pellets."

  "Since there are no adequate inspection and maintenance procedures in place to systematically identify and correct the above potential aging problems with dry-storage

[14] Ibid., p. 39
[15] Ibid., p. 114.

systems, it is important to plan for, establish and execute a regular inspection and maintenance program."[16]

There has been too much reliance on surrogate demonstrations programs that do not necessarily account for the actual history and conditions of the universe of High Burnup Fuel assemblies.

Supporting Rationale—Transportation

- **Inert Gas Testing must be assured prior to transport**
  A severe contamination event occurred at Battelle Memorial West Jefferson Facility in Ohio when a failed fuel assembly from the Connecticut Yankee nuclear reactor was sent for evaluation with only air as the gas in the canister.[17] A delay was caused because of high radiation levels (over 10 mrems at 10 feet), which required obtaining an exemption. Both the thermal output (2 kW) and source term exceeded the certificate of compliance. The temperature of the assembly reached 430 degrees C and fuel oxidation of uranium dioxide to U_3O_8 occurred. Oxidation increases the bulk or volume of the uranium fuel causing the rupture or unzipping of fuel rods. Upon arrival at Battelle the cask was loaded into the pool and flooded with water, generating steam and spreading the fuel, now as a fine powder, over the entire pool area of the building, as well as a number of radionuclides. NRC identified that just 4 days are needed for 15% of rods to unzip at 400 degrees C.[18]

  This particular phenomenon was previously unknown. This incident resulted in NRC requiring canisters to be filled with inert gas prior to shipment. Today as the NRC is reviewing applications for consolidated interim storage, the plan is to check helium or inert gas when Irradiated/ Spent Nuclear Fuel canisters arrive at a consolidated Interim Storage (CIS) facility. This is too late to provide for transportation safety.

- **Vibrations**. Normal operations for storage comprise movement of fuel to the storage pad and any other handling. These operations may cause slight bumping and vibration that is felt by the fuel and assemblies. Normal transport operations may involve much higher levels of vibration and bumping and for longer duration. [19]

- **The nation's infrastructure has been below par for decades.** The American Society of Civil Engineers gives grades for infrastructure for the nation and individual states. For 2017 the nation received a grade of D+. Infrastructure funding has been the subject of Congressional and Presidential advocacy, but to date there has not been any legislation to adequately fund the nation's infrastructure for more than a decade. Rail receives a better grade than other infrastructure, however there is a significant backlog of rail freight improvements that apparently cannot be addressed solely through cargo receipts.

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[16] Ibid., p. 119-120

[17] Damaged Spent Nuclear Fuel at U.S. DOE Facilities, Experience and Lessons Learned, INL, Nov 2005 INL/EXT-05- 00760, p. A-3. https://inldigitallibrary.inl.gov/sites/sti/sti/3396549.pdf

[18] Ibid., p. 8.

[19] Ibid., p. 79

Significant investments are needed in rail to handle the heaviest Class I rail car loads (Class I is needed for transport of SNF casks) as well as bridge repair. [20]

It is one thing to do transportation planning for routes and freight for infrastructure as is. Degraded infrastructure poses another level of difficulty that may require millions of dollars of funding to be approved by Congress, and then implemented through a construction contract. Particular routes may require major capital project that will add years to route approvals.

- **Transportation Planning.** At the June 13th NWTRB Meeting, Mark Whitehall, the representative from Switzerland informed us that 10-15 years are needed for adequate transportation planning. DOE is planning for only 7 years. Switzerland is a much smaller country than the U.S.

  Ken Niles, Director of the Dept. of Energy for the State of Oregon has worked with the Western Governors Assoc., the Western Interstate Energy Board and a High Level Rad Waste Committee. Mr. Niles worked on the transportation program for nuclear waste going to WIPP with the Western Governors Association. He reported that DOE funding for transportation planning was recently cut from DOE's budget, and as a result a core planning meeting was cancelled. Negotiations between DOE and the Rail Industry were abandoned. States will also need money for planning, oversight, inspections and emergency responder training and response. Despite commitments to funding states for their transportation efforts, Mr. Niles reports that states have not received adequate funding for 30 years. The current plans will require a major increase in funding. He was supportive of approaching transportation by region, because of the many planning needs rather than by the queue for oldest fuel first per the Nuclear Waste Policy Act. Transportation incidents can damage casks and containers raising major safety concerns and challenges to emergency response agencies, many of whom are volunteers with limited training.

- **Package Requirements** "Transportation package regulations are intended so that approved packages can be safely transported and not endanger emergency responders or the general public. The NRC application and review process to certify a package for transport is technically rigorous. The four key transport objectives addressed in regulations are: containment, shielding, criticality safety, and heat management. Specific to 10 CFR 71, five basic types of performance requirements and one characterization requirement must be met. During "normal conditions of transport," which includes minor mishaps because of rough handling or exposure to weather), a more strict set of requirements must be satisfied than is required for the sequence of "hypothetical accident conditions" defined in subsection 3.1.1. According to current NRC staff guidance, after simulation of the fuel-cladding behavior in cask performance tests under the specified "hypothetical accident conditions, the licensee must assure that there is no significant cladding failure. These are the specific regulatory requirements:

[20] https://www.infrastructurereportcard.org/

1. Limit dose rates on external package surfaces to acceptable levels (10 CFR 71.47 and 10 CFR 71.51). This specifies the contact dose on the surface of the package not exceed 200 mrem/hr for normal transport.
2. Prevent or limit the release of radioactive contents with the requirements for normal transport being more restrictive than those for hypothetical accident conditions (10 CFR 71.51).
3. Prevent an unsafe configuration (i.e., accidental criticality) of used fuel for both normal and accident conditions (10 CFR 71.55).
4. Preclude any "substantial reduction in the effectiveness of the packaging" for normal transport conditions including limits on the reduction of effective package volume and fuel spacing (10 CFR 71.43 and 10 CFR 71.55).
5. Limit temperatures on external package surfaces to specified levels (10 CFR 71.43) for both normal and accident conditions. This temperature should not exceed 122 F under ordinary circumstances.
6. A description of the proposed package contents, including "chemical and physical form" initially, and of any expected variations during normal transport and after the hypothetical accident condition tests (10 CFR 71.33(b) and 10 CFR 71.55).

ISG-11 Rev. 3 indicates that for the transport of high-burnup fuel, insufficient data currently exists to provide general safety criteria in accordance with the regulations noted above. As a result, approval for requests to transport high burnup CSNF 'will be handled on a case-by-case basis using the criteria given in 10 CFR 71.55, 10 CFR 71.43(f), and 10 CFR 71.51.' "[21]

- **The 2006 National Academy of Sciences report was not a declaration of absolute safety.** At the June 13, 2018 NWTR Board Meeting several DOE speakers cited the National Academy of Sciences report in 2006 and their finding that 'there are no technical barriers to the safe transport of spent nuclear fuel and high level radioactive waste.'

  Unfortunately the use of this briefly stated finding leaves a lot to be desired in terms of what the overall report said regarding a number of important issues, which we will briefly present below.

  NAS[22] "PRINCIPAL FINDING ON TRANSPORTATION SAFETY:
  The committee could identify no fundamental technical barriers to the safe transport of spent nuclear fuel and high-level radioactive waste in the United States. Transport by highway (for small-quantity shipments) and by rail (for large-quantity shipments)[23] is,

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[21] NWTRB 2010 Report, p. 41-42.

[22] National Academy of Sciences, Going the Distance? : The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States, 2006.

[23] (This report identifies two general types of transportation programs, *small-quantity shipping programs* and *large-quantity shipping programs*. While there is no precise quantity demarcation between these two program types, the former involve the shipment on the order of tens of metric tons of spent fuel or high-level waste, while the latter involve the shipment on the order of hundreds to thousands of metric tons.)

from a technical viewpoint, a low-radiological-risk activity with manageable safety, health, and environmental consequences when conducted with strict adherence to existing regulations. However, there are a number of social and institutional challenges to the successful initial implementation of large-quantity shipping programs that will require expeditious resolution as described in this report. Moreover, the challenges of sustained implementation should not be underestimated." (underlining is ours.)

As we present below, the actual finding of the NAS and the committee that worked on this issue was far more nuanced than implied by the DOE speakers at the NWTRB meeting. These are just a selection of the findings.

Transportation Security was not dealt with at all in this report because the committee was not provided access to relevant information. Following 9/11 even access to critical information was restricted. Recommendation:
"An independent examination of the security of spent fuel and high-level waste transportation should be carried out prior to the commencement of large-quantity shipments to a federal repository or to interim storage. It should be independent of the government and be free from institutional and financial conflicts of interest." [24]

Transportation Hazards
"RECOMMENDATION: Transportation planners and managers should undertake detailed surveys of transportation routes to identify potential hazards that could lead to or exacerbate extreme accidents involving very long duration, fully engulfing fires. Planners and managers should also take steps to avoid or mitigate such hazards before the commencement of shipments or shipping campaigns." [25]

Transportation Mode
The NAS committee endorsed DOE's mostly RAIL option as preferable to use of trucks. DOE made a decision to use dedicated trains only in July 2015. (This decision related to the Yucca Mountain Repository)[26] The Committee also supported dedicated trains over use of general purpose trains, used for other types of freight. We don't know whether this DOE decision about dedicated trains for nuclear waste will carry over to transport to CIS Facilities.

Order of Shipments
"The Nuclear Waste Policy Act specifies that older fuel should be shipped first. The Committee generally supported this plan, however it recommended "a pilot program involving relatively short, logistically simple movements of older fuel from closed reactors to demonstrate the ability to carry out its responsibilities in a safe and operationally effective manner. DOE should use the lessons learned from this pilot activity to initiate its full-scale transportation program from operating reactors. The Committee also mentioned considering a legislative fix." [27]

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[24] Ibid, p. 8
[25] Ibid, p. 10
[26] Ibid, p. 18.
[27] Ibid, p. 19.

Note: Several speakers at the June 13, 2018 NWTRB meeting mentioned the problem of dealing with fuel from all over the country based on the queue and expressed preference for a regional focus for the program. Dealing with the routes for one region at a time would simplify planning and management.

Emergency Preparedness

"Emergency responder preparedness is an essential element of safe and effective programs for transporting spent fuel and high-level waste. Emergency responder preparedness has so far received limited attention from DOE, states, and tribes for the planned transportation program to the federal repository. DOE has the opportunity to be innovative in carrying out its responsibilities for emergency responder preparedness. Emergency responders are among the most trusted members of their communities. DOE should begin immediately to implement its responsibilities under the NWPA in relation to emergency responders." [28]

Information Sharing and Openness

"There is a conflict between the open sharing of information on spent fuel and high-level waste shipments and the security of transportation programs. This conflict is impeding effective risk communication and may reduce public acceptance and confidence. Post–September 11, 2001, efforts by transportation planners, managers, and regulators to further restrict information about spent fuel shipments make it difficult for the public to assess the safety and security of transportation operations.

Recommendation: The Department of Energy, Department of Homeland Security, Department of Transportation, and Nuclear Regulatory Commission should promptly complete the job of developing, applying, and disclosing consistent, reasonable, and understandable criteria for protecting sensitive information about spent fuel and high-level waste transportation. They should also commit to the open sharing of information that does not require such protection and should facilitate timely access to such information."[29]

We are requesting that all of these issues be thoroughly covered in the Environmental Impact Statement pertaining to the WCS/ISP CIS Facility.

Thank you for your attention.

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[28] Ibid, p. 20.
[29] Ibid, p. 21.

Respectfully submitted,

Barbara J. Warren
Executive Director