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COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR A CONTAINER SYSTEM FOR THE MANAGEMENT OF NAVEL SPENT NUCLEAR FUEL

Thank you for the opportunity to comment on this document. Inyo County has closely followed issues and events connected to the proposed high-level radioactive waste repository at Yucca Mountain, Nevada. Our proximity to this site, the discharge of the regional aquifer into Inyo County, and the potential for the use of transportation routes to the site that cross the county have made these activities of great interest to Inyo County government and its residents.

A With the reorganization of the Department of Energy's Office of Civilian Radioactive Waste Management (in response to congressional direction), that office has transferred development of a multipurpose canister (MPC) and the associated National Environmental Policy Act requirements to the Navy. The Navy has elected to consider only those impacts that relate to the selection, manufacturing, storage and transport of canisters used for naval spent fuel and special case waste. The Draft Environmental Impact Statement (DEIS) does not discuss the cumulative environmental or socioeconomic impact of the development of a MPC in regards to the ultimate shipment of civilian spent nuclear fuel.

B The availability of a MPC developed specifically for disposal in a geologic repository, prior to the need for such a contamer for the shipment of civilian spent nuclear fuel, has the effect of prejudicing decisions regarding the use of the shipping container for these later civilian shipments. This observation is based on the assumption that the Navy will carry forward the design begun by the Department of Energy, which was developed to accommodate the entire range of fuel designs intended for disposal in a geologic repository. If the Navy intends to optimize that design for naval fuel to the point that civilian shippers will need to redesign and certify a different cask for their shipments, then the cumulative impacts of other MPC's can be examined at a later date. There is no indication in this document that this is the case, therefor these impacts must be considered here.

C The repeated assertion in this DEIS that the naval fuel comprises a small percentage (1 to 4 percent[1]) of the total volume of spent nuclear fuel destined for a geologic repository, and therefor imposes minimal additional environmental impact, is unfounded.

D The DEIS assumes that loaded containers will be transported entirely by rail[2]. At the same time, the DEIS assumes "as a convenience for analysis"[3] that the proposed repository at Yucca Mountain is the destination point for shipments. Unfortunately, the analysis does not take into account the fact that there is no rail access to Yucca Mountain. In fact the transportation chapter makes the assertion that "Since the naval spent nuclear fuel would be transported over existing rail lines, or new rail lines built for other projects, there would be no appreciable commitment of resources that would be irreversible or irretrievable."[4] However, the use by the Navy of a canister transportable only by rail would make it the only spent nuclear fuel in the nation that could not be transported by truck. The assumptions that other shipments to a geologic repository will be made by rail, and that the repository location will either have rail, or other programs will construct it, is unsupported. The Department of Energy's Office of Civilian Radioactive Waste Management has recently released its Revised Program Plan, in which it describes a "market-driven" transportation plan. This plan gives no assurance that rail will be the mode of choice. The DEIS must consider the impacts of heavy-haul of these canisters along existing available roadways

E Despite the dependence in some parts of the DEIS upon Yucca Mountain as the ultimate destination for naval fuel, the discussion on the environmental impacts of transportation[5] does not discuss route-specific impacts because "it is not possible to select a route since the repository location is unknown."[6] Either the ultimate destination is known (or assumed), or it is unknown. It is not possible to adequately comment on a document that assumes both. If it is assumed that the destination is known, the discussion of potential environmental impacts due to transportation of naval spent nuclear fuel is incomplete, lacking adequate data on route-specific conditions and impacts. This is despite the fact that the section that deals with air quality[7] seems to be able to determine the rail routes adequately to map them[8]. If the destination is unknown, the attempt of the DEIS to deal with route-related impacts is overly ambitious. Instead, the document should be considered programmatic in that additional tiers of documents may be developed when the destination is known and routing can be determined. At that time, route-specific analyses must be prepared, either for rail, some combination of rail and highway, or highway routes.

F If one of the MPC options are chosen for use with naval fuel and special case waste, the effect will be to both prejudice future civilian waste decisions (as previously described), and to limit the alternatives available for disposal. The DEIS also assumes that the MPC will be suitable for disposal[9], which the Department of Energy had considered to be a management risk. If the agency originally responsible for the specifications and design of the canister had been unable to determine the suitability of the canister for disposal with certainty, then the inheritor of that design cannot assume it. If either of the MPC options are to be considered, the DEIS must determine the effects and potential environmental impacts of the possible need to open and re-canister the naval fuel and special case waste prior to disposal.

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[1] S 8 1 Cumulative Impacts, 3.8.5 Summary of Cumulative Impacts, 4 10 Cumulative Impacts, 6 4 Cumulative Impacts, 7 3 7 Cumulative Impacts, C 4 Cumulative Socioeconomic Impacts.
[2] S.2, paragraph one
[3] Ibid
[4] 7.3.8
[5] 7.1-7 4
[6] 7.2
[7] 7.3 2
[8] Appendix B, pages B-31—B-33
[9] S 2 1,S.2.6,3.0,4 1.1.etc

G The DEIS assumes the shipment of naval spent fuel by rail in general freight. At meetings held by the Department of Energy on the MPC, the American Association of Railroads has indicated their concerns regarding train dynamics, rail conditions, switchyard considerations, security, and speeds in the modern rail system when considering shipment of MPCs or other large, heavy casks by general freight. These concerns must be addressed and resolved in the DEIS.

H There is insufficient information concerning the physical and radiological characteristics of naval spent fuel or special case waste. This makes it impossible to review the potential public health, environmental, and socioeconomic impacts for each alternative, both during transport and disposal.

I I hope these comments are of assistance in the preparation of the National Environmental Policy Act documentation for this proposed action. In its current form, the draft does not meet the requirements of that Act. It either needs to be revised in the form of a programmatic environmental impact statement and reissued in draft, or redrafted to incorporate the whole of the action and recirculated in draft form. In any case, please provide this office with a copy of the subsequent document issued by the Navy. If there are any questions, please contact me at the above address.

Sincerely,

Brad Mettam

Brad Mettam

Commenter: Brad Mettam - Inyo County Planning Department, California

Response to Comment:

A. This Environmental Impact Statement is issued by the Navy with the Department of Energy acting as a cooperating agency pursuant to National Environmental Policy Act regulations. The intent and focus of this EIS are dedicated to naval spent nuclear fuel concerns. Only the environmental or socioeconomic impacts associated with the container system for naval spent nuclear fuel are considered. Environmental or socioeconomic impacts of the selection of a container system for civilian spent nuclear fuel are considered to be outside of the scope of this EIS. The Navy assumed the lead to write this EIS for naval spent nuclear fuel when the Department of Energy halted its proposal to fabricate and deploy a multi-purpose canister based system and ceased preparation of the EIS for the management of naval and civilian spent nuclear fuel. Pursuant to a court ordered agreement among the State of Idaho, the U. S. Department of the Navy, and the U. S. Department of Energy, the Navy needs to ensure that its spent nuclear fuel is transported from Idaho National Engineering Laboratory to a geologic repository or centralized interim storage site outside the State of Idaho when either would become available. This EIS is necessary to allow the Navy to fulfill its obligations under that court order.

B. The designs of the container systems presented in this EIS are solely for the use of naval spent nuclear fuel. The dimensions and weight of naval spent nuclear fuel assemblies would allow them to fit into the same container system as those designed for civilian spent nuclear fuel; however, the structural integrity of naval and civilian spent nuclear fuel are not the same. These container designs may not be appropriate for the use of civilian spent nuclear fuel. A statement has been added to this EIS in Chapter 1, Section 1.0 to clarify this point. It is beyond the scope of this EIS to evaluate a container system for the storage, transportation and delivery of civilian spent nuclear fuel to a geologic repository or centralized interim storage facility.

   It is not correct to say that the availability of a container system for naval spent nuclear fuel prejudices decisions regarding the use of the shipping container for civilian shipments. It is recognized that the conclusions and decisions reached as a result of this EIS along with the requirements of the National Environmental Policy Act might provide some information of use in the selection of a container system for civilian spent nuclear fuel. However, many environmental impact statements and policies are "tiered" from what has occurred before and what is expected to occur in the future and this is consistent with National Environmental Policy Act regulations in 40 CFR 1501.7(a)(5). It is noted in the Executive Summary, Section S.8.1 of the EIS that the number of containers needed for naval spent nuclear fuel represent about 1 to 4 percent of the total number of containers needed for both naval and civilian spent nuclear fuel which would be shipped to a repository or centralized interim storage site.

C. Naval nuclear reactors are small and have had infrequent refuelings, when compared to the size and fuel needs of commercial nuclear reactors. As noted in Chapter 1, Section 1.1 of the Draft EIS and presented on the table below, there are approximately 12 metric tons of heavy metal of naval spent nuclear fuel at Idaho National Engineering Laboratory and a total of approximately 65 metric tons of naval spent nuclear fuel is expected to exist by the year 2035. When compared to the current 30,000 metric tons and projected 80,000 metric tons inventories of commercial spent nuclear fuel, it is clear that the naval spent nuclear fuel is a very small percentage of the total amount. Therefore, it is unlikely that any environmental or socioeconomic impacts resulting from the storage, transport and disposal associated with naval spent nuclear fuel would represent a significant increase in the impacts associated with the storage, transport and disposal of all spent nuclear fuel.

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AMOUNT OF SPENT NUCLEAR FUEL		
	CURRENT INVENTORIES	2035 PROJECTED INVENTORIES
Naval spent fuel at Idaho National Engineering Laboratory	12 metric tons	65 metric tons
Non-naval DOE spent fuel	250 metric tons at Idaho National Engineering Laboratory	2700 metric tons in US
Commercial spent fuel in US	30,000 metric tons	80,000 metric tons

D. The Navy is aware that no rail link to the Yucca Mountain site currently exists, and that if it were to become the site of a repository or centralized interim storage facility, heavy-haul transport might be used in place of a rail connection. However, the resolution of that issue will depend on the site eventually selected and the evaluation of the environmental impacts and other factors specific to that site. The routes, distances, and potentially affected populations would be the same for all of the alternative container systems considered for naval spent fuel because the shipments will use the same route--the route selected for shipment of commercial spent nuclear fuel and high-level radiological waste to the repository or centralized interim storage site. Similarly, all container systems considered would have the same design dose rate, 10 millirem per hour at 2 meters, as required by the Department of Transportation regulations (49 CFR 100 et seq). Therefore, the key difference in the alternatives for the purposes of comparing the impacts associated with heavy-haul transport for naval spent nuclear fuel using the alternative container systems is the number of shipments. Text which explains this matter has been added to Appendix B, Section B.4.

The radiological risks of shipping naval spent nuclear fuel have been conservatively analyzed in this EIS and are described in Section B.5.1. The analyses use a train speed of 15 miles per hour. This is slower than the actual expected transport speed. Using the slower train speed is conservative because that results in higher calculated radiation exposure to the public (trains spend more time proximate to the public). This conservatively slow train speed means that the exposure associated with the transport speeds for possible heavy-haul transport would be similar to the results for rail shipments of the same length over similar routes (e.g., Caliente to Yucca Mountain).

Text has been added to Section B.5.2 to specifically cover these points.

The DOE's Notice of Intent for Preparation of an Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (60 FR 40164), states that "The potential impacts associated with national and regional shipments of spent nuclear fuel and high-level radioactive waste from reactor sites and DOE facilities will be assessed. Regional transportation issues include: (a) technical feasibility, (b) socioeconomic impacts, (c) land use and access impacts, and (d) impacts of constructing and operating a rail spur, a heavy haul route, and/or a transfer facility...". The Navy will work with the Department of Energy to ensure naval spent nuclear fuel is properly addressed in the Repository EIS analyses. Comparison of heavy-haul transportation

routes is pertinent to this EIS to the extent that it helps to discriminate among the alternatives considered.

All of the alternative container systems would be suitable for heavy-haul transportation, as illustrated by prior use of the containers based on M-140 in heavy-haul transport. However, it is accurate to state that the alternatives based on M-140 would be less suitable due to size, height, and weight. This statement has been added to Chapter 3, Sections 3.2, 3.8.4 and Chapter 7, Section 7.3 of the EIS.

E. A range of routes to a repository or centralized interim storage site is used for the transportation analysis in this EIS in order to determine whether different routing characteristics, such as distance or differences in population distribution, would affect the comparison of the alternative container types. Since no repository or centralized interim storage site has yet been selected, the transportation routing in this EIS uses a site being evaluated by the Department of Energy pursuant to the Nuclear Waste Policy Act as the destination point for the naval spent nuclear fuel shipments.

The Navy recognizes that the legal and regulatory climate is evolving on nuclear waste transportation matters and is keeping abreast of the requirements. From the historical perspective, naval spent nuclear fuel has been shipped safely by rail for almost 40 years (over 660 container shipments) without release of radioactivity to the environment. Federal, state and local regulations have been fully met in the past. This EIS addresses issues in the light of the existing laws and regulations and the best information available on the future conditions. The Navy's shipment history demonstrates that the Navy is committed to ensuring the safety of spent nuclear fuel transportation. This commitment to safety will continue in the future as the new laws and regulations affecting transportation of spent nuclear fuel and high-level radioactive waste are implemented. For the sake of comparing a reasonable range of alternatives the current regulations have been applied conservatively in the EIS transportation analysis.

The DOE's Notice of Intent for Preparation of an Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (60 FR 40164), states that "The potential impacts associated with national and regional shipments of spent nuclear fuel and high-level radioactive waste from reactor sites and DOE facilities will be assessed. Regional transportation issues include: (a) technical feasibility, (b) socioeconomic impacts, (c) land use and access impacts, and (d) impacts of constructing and operating a rail spur, a heavy haul route, and/or a transfer facility...". The Navy will work with the Department of Energy to ensure naval spent nuclear fuel is properly addressed in the Repository EIS analyses.

Additional discussion to clarify these points has been added to the EIS in Chapter 7, Section 7.1 and Appendix B, Section B.1.

F. It is advantageous to seal the fuel elements and special case waste in a canister-type container that would not have to be opened before disposal to protect the workers at the geologic repository. However, it is incorrect to characterize this advantage as "prejudicial" or limiting for civilian waste decisions. Since the National Environmental Policy Act regulations encourage environmental assessments and environmental impact statements to be tiered to what has been done before and what is planned or anticipated for the future (40 CFR 1502.20), it is possible that decisions regarding civilian spent nuclear fuel may make use of some information from this EIS.

The acceptance criteria for a container that will be used for final disposal to a geologic repository has not yet been established. Although the multi-purpose canister is one of the alternatives proposed for use for disposal in a geologic repository, it is recognized that a special overpack container will be necessary for final disposal. It is beyond the scope of this EIS to determine the appropriate characteristics of the disposal container in a geologic repository. The analysis of impacts for a disposal container, including any handling required in a geologic repository or centralized interim storage facility, will be part of the site-specific EIS prepared for such a facility by the Department of Energy.

G. The shipment of naval spent nuclear fuel containers in general commerce; i.e., as part of freight trains carrying other cargo to many destinations has proven to be acceptable and practical in almost 40 years of experience, including over 660 shipments of naval spent nuclear fuel. This practice is not especially complex and has been proven to cause no increase in difficulty or hazards of point-of-entry inspections for railroad or other personnel. It has not contributed to any derailments and the railroads have provided clearance for the shipments and associated railcars, frequently being involved in the design process for the systems. The shipping containers are designed to meet the requirements for shipping in general commerce, including withstanding high temperature fires. Safety precautions, such as using buffer cars, have worked well over time.

The issue of whether dedicated trains will be used to ship naval spent nuclear fuel to a geologic repository or a centralized interim storage facility has not been decided, but the safety and practicality of making the shipments in general commerce have been established. The shipments are accompanied by escorts who are able to establish communications with law enforcement or emergency response agencies immediately in either case. The number of containers of naval spent nuclear fuel is the same for any of the alternative systems considered, whether in general interchange or by dedicated train, and this is the primary factor in determining the environmental impacts associated with the decision supported by this EIS. Therefore, the analyses in Chapter 7 and Appendix B evaluate the alternatives sufficiently.

H. The level of information in the Container System EIS is sufficient. Although the detailed design of Navy fuel is classified, the EIS contains significant information concerning its performance characteristics and the contents of the loaded container systems such that the environmental impacts from its shipment, storage, and management can be assessed and independent analyses can be performed to verify the results presented in this EIS. Chapter 2, Section 2.3 of the EIS presents the general characteristics of naval nuclear fuel, including design description, U-235 enrichment range, the amount of U-235 in a loaded container, criticality control measures, and the results of decay heat calculations. Appendices A and B contain detailed numerical data on the source terms and on corrosion product and fission product releases expected for each container system for each hypothetical accident scenario analyzed. The Appendices also identify the computer programs which were used, along with the specific assumptions for each accident scenario.

For example, Table B.8 provides a list of the radioactive nuclides which might be released in a shipping accident involving naval spent nuclear fuel. The data on the amount of radioactivity are divided into the amounts released from the fission products in the fuel and the amount in the activated corrosion products attached to the surface of the fuel. The data are provided for typical spent fuel in nuclear-powered submarine and surface ship fuel assemblies to demonstrate the range of radioactivity. Using the information in this table, along with the other detailed information on the calculations provided in Appendix B, allows independent reviewers to evaluate the calculation of impacts of a hypothetical accident on human health and the environment. It also permits an independent reviewer to perform analyses using alternate methods, such as other computer programs, or utilizing other conditions, such as different weather or accident conditions.

Commenter: Brad Mettam - Inyo County Planning Department, California

The information in Appendix A, including the amount of radioactivity released and the fraction of the total activity in naval spent nuclear fuel it represents, is provided in similar detail to permit independent analyses for normal and accident conditions.

The Navy has provided in this EIS, and in documents referenced in the EIS, a substantial amount of information on the handling, storage, and shipment of naval spent nuclear fuel and the types and amounts of radiation or radioactive material involved in releases from normal operations and postulated accidents in this EIS. The Navy has attempted to provide enough information on radiation, radioactivity, and other aspects of operations or hypothetical accidents to allow independent calculation and verification of all estimates of environmental impacts.

I. This Draft EIS does meet the requirements of the National Environmental Policy Act. Various references have been provided throughout the Draft EIS and in these comment responses to document National Environmental Policy Act compliance. National Environmental Policy Act requires environmental documents to concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1(b)). It is unclear why the commenter thinks this EIS might not to be in compliance with National Environmental Policy Act. The comments received from Inyo County resulted in only minor changes to the wording in this EIS to clarify a few points. Inyo County will be provided with a copy of the Final EIS for a Container System for the Management of Naval Spent Nuclear Fuel.