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July 18, 1996

Richard A. Guida
Associate Director for Regulatory Affairs
Naval Nuclear Propulsion Program
Department of the Navy
2531 Jefferson Davis Highway
Arlington, VA 22242-5160

Dear Mr. Guida:

Eureka County, Nevada is one of ten affected units of local government provided for under the Nuclear Waste Policy Act as Amended (NWPAA). We would like to take this opportunity to express our concerns regarding the Navy's Draft EIS for a Container System for Naval Spent Fuel.

A (1) Since the U.S. Navy has assumed responsibility from the Department of Energy (DOE) for development of what used to be known as the Multiple Purpose Canister (MPC) Environmental Impact System (EIS), this draft document has been significantly scaled back. It has also become more narrowly focused and deals only with the storage and potential transport of spent naval reactor fuel and small amounts of "special case waste" at Idaho National Engineering Laboratory (INEL). It does not address canister systems for commercial spent fuel or other forms of high-level waste. Eureka County, therefore, is concerned that the level of information in the draft EIS is totally
B inadequate. Without information on the different characteristics of Naval reactor spent fuel and commercial spent fuel, issues such as criticality, thermal impacts, and compatibility with other waste forms cannot be assessed. Technical data regarding the comparative health risks analysis is also lacking.

C (2) A proposed action or preferred alternative is not specified in the draft EIS. It would seem essential that the final EIS include sufficient information so that once a preferred alternative is identified it can be adequately evaluated.

D (3) Without adequate information on waste form characteristics, the claim that the Naval SNF waste form presents little risk is a specious one. The Navy must be required to evaluate the risks and impacts from low probability/high consequence events.

E (4) A more thorough analysis must be made on the potential for disproportionate impacts to rural communities along shipping routes. The issue of environmental justice must be addressed more adequately along with the specific mitigation measures the Navy is committed to implementing.

F (5) Because there could be significant differences in risks, environmental and health and safety impacts, not to mention costs associated with various transportation systems, the final EIS must evaluate heavy haul/intermodal transport, not just rail and highway.

G (6) Many other stakeholders are involved besides DOE, the Navy and the State of Idaho. The final EIS must address the potential conflict between DOE's agreement with Idaho and its agreements with utility companies regarding waste acceptance. This lack of clarity could have implications for a preferred alternative by requiring longer term on-site storage at INEL.

H (7) In order to fully integrate and assess the impacts of Naval reactor spent fuel on Yucca Mountain, the final EIS should address how the Navy's EIS will complement DOE's Yucca Mountain EIS.

I hope these comments will be helpful to you in your preparation of the final EIS. If you have have questions please do not hesitate to write or call.

Sincerely,

Sandy Green

Sandy Green, Project Coordinator

Commenter: Sandy Green - Eureka County/Yucca Mountain Information Office, Nevada

Response to Comment:

A. As a result of the Department of Energy's decision to terminate preparation of a proposal for a multi-purpose canister system for the management of civilian and naval spent nuclear fuel, the Department of the Navy assumed lead responsibility for an EIS evaluating a container system for naval spent nuclear fuel only. At the same time, the Department of Energy's role in the preparation of this EIS became that of a cooperating agency. Although the intent and focus of this EIS is dedicated to the selection of a container system for naval spent nuclear fuel, future decisions regarding commercial or other spent nuclear fuel can make use of some information from this EIS.

B.&D. 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 adequacy of 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. 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.

As discussed in Section A.2.3, beyond design-basis accidents were evaluated in this EIS. These accidents have a probability of occurrence in the range of 10^{-6} to 10^{-7} per year and could have large or catastrophic consequences. For example, an airplane crash into dry storage containers was evaluated at the Idaho Chemical Processing Plant. Despite the consequences (1.3 to 2.6 latent cancer fatalities estimated), the annual risk associated with this hypothetical accident (1×10^{-6}) is less than the risk associated with a drained water pool due to an earthquake (2.4×10^{-6}) because of the low probability of the airplane crash. These analyses results and others are presented in Section A.2.5 of the EIS.

Commenter: Sandy Green - Eureka County/Yucca Mountain Information Office, Nevada

C. The Draft EIS for a Container System for the Management of Naval Spent Nuclear Fuel proposes and evaluates a range of alternatives that would provide a system of containers for the management of naval spent nuclear fuel. Although any of the six alternative container systems would provide a suitable container for naval spent nuclear fuel, the identification of a preferred alternative in the Final EIS has taken into consideration factors relating to protection of human health and environment, cost, technical feasibility, operational efficiency, regulatory impacts, and storage or disposal criteria which may be established for a repository or centralized interim storage site outside the state of Idaho. Also, public comments on the Draft EIS were an important factor in the selection of a preferred alternative container system. The preferred alternative has been chosen from among the six container systems analyzed in the Draft EIS with no further evaluations of the selected preferred alternative required.

D. See the response to comment B above.

E. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse effects on human health or the environment of its programs, policies, or activities on minority populations or low-income populations. This EIS addresses environmental justice for minority, low-income, and Native American populations in sections related to manufacturing in Chapter 4, Section 4.8, loading and storage in Chapter 5, Section 5.8, and shipment over public transportation routes in Chapter 7, Section 7.3.5 and in the Executive Summary.

Analyses of the potential impacts associated with all of the container systems considered for management of naval spent nuclear fuel are presented in this EIS for manufacturing, loading and storage, and shipment over public transportation routes. These analyses show that any effects on human health or the environment would be small for all of the alternatives considered. The potential impacts due to normal operations or hypothetical accident conditions associated with the alternative container systems evaluated present little or no significant risk to public health or the environment and do not constitute an adverse impact to any population in the vicinity of the activities involved, including Native American, minority and low-income populations.

This EIS includes specific demonstrations that the impacts resulting from any of the alternatives considered would not be high and adverse for any group. For example, Section 7.3.5 includes an analysis of the impacts of shipments on minority and low-income populations. This analysis assumed that all of the latent cancer fatalities which might occur as the result of a severe accident during transportation of naval spent nuclear fuel using any of the container systems considered were among members of minority populations and demonstrated that they would experience far less than one additional fatality per year. Section 7.3.5 also includes a comparison of this less than one potential additional accidental death per year among members of minority populations to the approximately 7400 deaths in minority populations due to traffic accidents in 1994 to provide perspective.

Similarly, the radiation exposure from incident-free shipment for the total number of shipments for 40 years is presented in Section 7.3.5 for the Fort Hall Reservation as a concrete example of the very small risk to a minority population or low-income population who might be exposed to every shipment. The Shoshone-Bannock Reservation at Fort Hall was used to illustrate the absence of high and adverse impact because every shipment of naval spent nuclear fuel would pass through those Native American lands on the way from the Idaho National Engineering Laboratory to any repository. Other minority or low income populations would not be exposed to human health or environmental effects which would differ greatly from those estimated for

Fort Hall. Similarly, the accident risks in Table 7.5 and the maximum consequences of a severe hypothetical accident in Table B.13 were determined for urban, suburban, and rural populations and the input to the analyses make these results applicable to any population group in those categories. The discussion of environmental justice in this EIS is sufficient and in compliance with the Council on Environmental Quality regulations in 40 CFR 1502.2(b).

As pointed out by the commenter and described in Section B.4 of the EIS, specific routes, including the fraction of the total distance of each route that would be through rural, urban, or suburban localities, were used to compare the possible impacts of the alternatives. Also as identified in Sections B.4 and B.5, the analyses used estimates of the population density in the rural, urban, and suburban areas which are unlikely to be exceeded. The probabilities of accidents for the transportation used in the analyses were specific to each state along the route to correctly represent variations in accident rates, as described in Section B.5.2 of the EIS. Table B-13 provides a summary of the maximum consequences of a severe hypothetical accident broken down by rural, urban, and suburban areas.

As shown by the analyses in this EIS, including the analyses for minority, Native American, or low-income populations presented, there are no high and adverse impacts associated with the alternatives considered. Even if all of the impacts were assumed to occur only among minority or low-income populations, the impacts for any of the container systems for naval spent nuclear fuel management would not constitute a disproportionately high and adverse impact to any particular segment of the population, minorities and low-income groups included. Since there are no disproportionately high and adverse human health or environmental effects for any population, no mitigating measures beyond the normal practices for shipment of spent nuclear fuel will be necessary.

The text of Section 7.3.5 of the EIS has been modified to enhance the reader's ability to use the results of the analyses to evaluate the possibility that any of the alternatives might have a disproportionately high and adverse impact on minority populations or low-income populations.

F. 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 M-140 containers in heavy-haul transport. However, it is accurate to state that the M-140 based alternatives would be less suitable due to size, height, and weight. This statement has been added to Chapter 3, Section 3.2 and 3.8.4 and Chapter 7, Section 7.3 of the EIS.

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, a maximum of 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 average transport speed. Using slower train speeds is more conservative because that results in a 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).

It is unlikely that passengers in recreational vehicles and buses (elevated vehicles) traveling in the vicinity of an oversized load on a heavy-haul transport vehicle would be as close as the 2 meter distance of the regulatory package maximum external exposure of 10 millirem per hour. First, the length of the tractor and the overlap of the trailer on the sides and at the rear would prevent any vehicle approaching as close as 2 meters (about 6.5 feet) to the exterior surface of the container. Second, the routine safety precautions for shipping would involve at least one escort vehicle for the tractor-trailer rig due to its size and speed. This escort vehicle would add several meters to the distance from the spent nuclear fuel shipping cask. In the EIS a maximally exposed individual for shipments has been described in Section B.3.1, and the results in Table B.10 are evidence of small impact for such a person.

The range of accidents analyzed in the Section B.5.2 would bound the impacts from a hypothetical heavy-haul transportation accident at an intersection in Las Vegas, such as at the intersection of I-15 and U.S. Route 95 on a week day during rush hour. Such an event would be expected to produce impacts which would be within the scope of the accidents analyzed in Section B.5.2, using an urban population density of 3,861 people per square kilometer. These severe hypothetical accidents have also been analyzed for the rural population density of six people per square kilometer and would produce estimates of effects similar to those which might result from the scenario postulating an accident at the intersection of Nevada State Routes 375 and 318 at Crystal Springs.

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

G. There are no conflicts between the Department of Energy's agreement with Idaho, dated October 16, 1995 and Department of Energy's agreements with utility companies regarding acceptance of civilian spent nuclear fuel. The standard contract between the Department of Energy and utility companies (10 CFR Part 961) identifies that Department of Energy will take title to, transport, and dispose of spent nuclear fuel from civilian nuclear power reactor plant owners or generators of such fuel. The standard contract allows Department of Energy, after it takes title, to transport this spent nuclear fuel to a Department of Energy facility prior to its transportation to a disposal facility. The DOE has advised the Navy that a number of DOE facilities could be used for that purpose.

Commenter: Sandy Green - Eureka County/Yucca Mountain Information Office, Nevada

H. There is no connection between the Navy Container System EIS and the EIS which the Department of Energy is preparing for a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nevada. The intent to prepare the Department of Energy EIS was announced (60 FR 40164) on August 7, 1995 and its purpose is identified to support a recommendation to the President to approve the site for development of a repository.

The proposed action of this EIS does not entail actual shipment to a repository or a centralized interim storage site. Rather such a shipment to a notional repository or centralized interim storage site is evaluated to help distinguish among the six container alternatives. As stated in the EIS, the proposed action is the selection of a container system for the management of post-examination naval spent nuclear fuel and Navy-generated special case waste. The proposed action also includes:

- Manufacturing the container system.
- Loading, handling and storage of the container system at Idaho National Engineering Laboratory.
- Modifications to the Expended Core Facility and the Idaho Chemical Processing Plant at Idaho National Engineering Laboratory to support loading the containers at Idaho National Engineering Laboratory.
- Selection of the location of the dry storage area at Idaho National Engineering Laboratory.
- Evaluating the impacts of transporting the container system to a representative or notional interim storage facility or repository and unloading the container system at that hypothetical location.

Including the impacts of transporting the container system to, and unloading at, a representative or notional interim storage facility or repository ensures that the container system selected is compatible with these operations at these facilities to the extent they are defined at this time. The EIS shows that the differences between container systems are very small and the impacts of any of the alternate systems is also small. Since the specific location of a repository is not known at this time, the Navy Container System EIS used Yucca Mountain, Nevada as the representative location since it is the only location currently approved for site characterization.