



Department of Comprehensive Planning

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July 18, 1996

William Knoll
Department of the Navy
Code NAVSEA 08U
2531 Jefferson Davis Highway
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Subject: Draft Environmental Impact Statement for a Container System for the Management of Naval Spent Nuclear Fuel [The "DEIS"]

Dear Mr. Knoll:

With this letter, the staff of the Clark County Department of Comprehensive Planning is submitting its formal comments on the above-referenced DEIS. These comments reflect the position of Clark County government officials who have had frequent interaction with representatives of civilian and defense-related programs of the Department of Energy [DOE], Nevada Operations Office, and related federal agencies. The views expressed herein are well-known to our colleagues at the DOE and, in many instances have been expressed as we have commented on a number of environmental impact statements regarding nuclear waste storage or disposal activities at or near the Nevada Test Site [NTS]. We urge you to review comments on any EIS that includes use of the NTS or Yucca Mountain as an option so that you may appreciate the context within which we make our comments.

A Content and Direction of DEIS. Usually, the lead agency for an EIS provides a preferred alternative against which other alternatives are evaluated. While this approach is not necessary, we feel that the lack of a preferred alternative in this case has resulted in a diffusion of the direction that you have taken in completing the DEIS. For example, use of the Yucca Mountain as a representative site has led you to the assessment of impacts along a transportation system that [1] would probably not be used in the foreseeable future, and, [2] is nonexistent, as you define it. There is no direct rail access to the NTS or Yucca Mountain and use of rail from INEL to Yucca Mountain would call for the siting and operation of an intermodal transfer facility, a major federal action that would call for its own EIS, under present federal law.

B It appears that the effort and thought that you have given this would be better applied to a INEL-specific EIS regarding storage options until there is clear guidance from DOE regarding complex-wide waste management and environmental restoration policies. Your reference to the 1995 Programmatic EIS for SNF and INEL indicates that you recognize the need for such guidance. As program policies are formed and programmatic EISs completed by DOE, a complex-wide impact assessment effort regarding transportation between and among generator, storage, and disposal sites would be more useful as a decision tool for specific programs such as yours.

COMMISSIONERS

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Jay Bingham, Lorraine Hunt, Erin Kenny, Myrna Williams, Bruce L. Woodbury
Donald L. "Pat" Shalmy, County Manager

- C Nature of the Spent Nuclear Fuel and Radioactive Waste and Relationship to the MPC.** This DEIS addresses naval spent fuel and special case low-level radioactive waste, both of which are noted as unique. However, the conceptual MPC needs to be modified from its previously-planned configuration [for civilian spent nuclear fuel] in order to accommodate these unique forms. Analyses of the characteristics [e.g., critically, thermal loading], similarities and differences of each waste type must be presented in order to fully represent their potential risks and impacts within the Yucca Mountain context and design. For example, it is not clear whether the present repository design will accept a modified MPC. If not, how must the design be modified and what effect would the emplacement of this small percentage of the total repository waste have on the entire program.
- D Adherence to the Civil Suit and Agreement [Case 91-00540-5].** This case is of utmost importance to the disposition of naval spent nuclear fuel and must be fully discussed in Chapter 8 of the DEIS and in the final document. The DEIS mentions Birch Creek and the Lemhi Range as alternatives for the transfer of the SNF from wet to dry storage. It is then pointed out that each site poses significant problems. Further, it is not clear that any site in Idaho meets the requirements of the suit. Does this leave Yucca Mountain as the only acceptable storage area? If so, this site can no longer be considered as representative, but must be evaluated as a candidate site. This is an area that needs much clarification.
- E Transportation Analysis, Cumulative Impacts and Environmental Justice Along Transportation Routes.** We feel that the analysis of transportation effects is inadequate for a number of reasons - the major one being the unrealistic and simplistic scenarios that are presented. For instance, all shipments are said to be by rail even though there is presently no railroad within 100 miles of Yucca Mountain. Rail access may be provided only by the construction of a rail spur, the location, feasibility and cost of which is the subject of much study and disagreement. Further, there is little attention paid to the use of heavy haul trucks, the necessity for and the cost of siting and construction of an intermodal transfer facility and related considerations. If transportation is to be addressed, it would be advisable to consider and fully describe and analyze one realistic route that corresponds to other DOE scenarios. Until this is done, any finding of minimal impact is open to question just because of the underlying assumptions. Each of the three projected transportation routes pass through Las Vegas, Nevada, an area which is home to two-thirds the population of the state [over 1,000,000 residents] and which hosts a daily visitor count of over 80,000 people. In addition, 38% of the population along the Union Pacific Railroad is considered to be members of minority or low income groups. Two rural Indian reservations located within the Clark County jurisdiction straddle the mainline railroad tracks. Despite these statistics, there is little evidence that the DEIS considered the issues of environmental justice or risk to an urban population. Instead, the statement was made that since no site is actually being considered, it was not necessary to take this information into account. Instead, only cursory attention was paid to the issue of environmental justice for one Indian reservation in Idaho. If Yucca Mountain is to be the representative destination site in the transportation analysis, then all aspects of the journey to that site must be addressed. Either there must be a generic site that provides an opportunity for generic analyses or, as in this case, there must be a full accounting of all variables related to the site chosen for analysis. They cannot be mixed.
- G**
- H** We also feel that the EIS must take into account cumulative impacts on Clark County that may result from the use of Yucca Mountain or the NTS as a storage or disposal site for a number of DOE activities. Given the approach taken in the DEIS that identifies only impacts from this one activity, it is not possible to reliably estimate the impacts to a geographic area or jurisdiction that may result from a number of

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initiatives taken by DOE. That is, even though other related EISs are mentioned, there appears to be no analysis of potential interaction among the various DOE activities that are referenced. While any one activity may have negligible impacts on Clark County, significant impacts would result from a scenario where Yucca Mountain is selected a major site for storage or disposal of nuclear materials. Based upon the fact that Yucca Mountain and the NTS are being considered as storage or disposal sites in a number of ongoing DOE EISs, this latter situation is a distinct possibility.

- I **On-Site Scenarios.** Weather conditions at the NTS do not lend themselves to tornadoes or severe thunderstorm episodes that would produce wind-driven projectiles of a sufficient mass to effect the mechanical damage suggested in the report. However, Yucca Mountain is near the flight path for military and commercial aircraft and it may be more appropriate to address the potential for an aircraft crash into the unloading area. Military aircraft bound for the Nellis ranges usually carry on-board munitions.
- J **Health Effects.** Since Yucca Mountain is named as the representative storage site, consideration should be given to utilizing actual site meteorology in the evaluation of health effects, even though such effects would be small. This would provide a more realistic appraisal than is presently the case. Accordingly, the actual NTS/Yucca Mountain climatology should be used to study the unloading facilities. It would show that the prevailing winds are bimodal, southwesterly in the summertime and north to northeasterly in the winter. To protect people and equipment, this information should be used to site ancillary facilities outside the downwind sectors for these prevailing winds.
- K It should be noted that the dispersion of a plume of ionizing radiation and the downwind fallout footprint it produces, is dependent upon the stability of the atmosphere and the associated wind speeds. A very stable atmosphere with low wind speeds would mix the plume into a very much smaller volume than an unstable atmosphere and stronger wind speeds which would dilute the plume into a very much larger volume and thereby reduce the potential negative health effects.

We hope that these comments are helpful to you in your work to complete the *Draft Environmental Impact Statement for a Container System for the Management of Naval Spent Nuclear Fuel*. We look forward to commenting on the final EIS and other documents regarding this initiative.

Sincerely,



RICHARD B. HOLMES
DIRECTOR

cc: Clark County Board of County Commissioners
Jim Ley, Clark County Manager's Office
Dennis Bechtel, Nuclear Waste Division

Commenter: Richard B. Holmes - Clark County/Dept of Comprehensive Planning, Nevada

Response to Comment:

- A. The County is correct in observing that the Draft EIS does not contain a preferred alternate. 40 CFR 1502.14(e) states that the Draft EIS should include a preferred alternative if one exists. None was identified in the Draft EIS since the Navy had no preferred alternative at that time. A preferred alternative has been identified in the Final EIS.

The Draft EIS contains six alternate container systems. Each of the six systems has been evaluated for loading at Idaho National Engineering Laboratory, dry storage at Idaho National Engineering Laboratory, loading for shipment, and shipment outside the State of Idaho to a representative or notional repository and unloading at that hypothetical location. The systems are similar, yet different.

All six of the container systems are practical for use in managing naval spent nuclear fuel and special case waste. The differences in environmental impacts between the six systems are small.

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, there is little use to add details such as the specific heavy-haul route to Yucca from the main rail line at Caliente, Nevada. This EIS is to pick a container system - not to pick a repository.

- B. In regard to Clark County's comment that a complex-wide EIS evaluating transportation between and among all generator, storage and disposal sites would be more useful, this is not a matter under the Navy's purview. Congress has determined that, with respect to the requirements imposed by the National Environmental Policy Act of 1969 (42 U. S.C. 4321), compliance with the procedures and requirements of the Nuclear Waste Policy Act (42 U.S.C. 10101, et seq, as amended) shall be deemed adequate consideration of the "...need for a repository, the time of

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initial availability of a repository, and all alternates to the isolation of high-level radioactive waste and spent nuclear fuel in a repository..." and that "...alternate sites to Yucca Mountain..." and "...nongeologic alternatives to such site..." need not be considered as alternates. (42 U.S.C. 4321, Article 114(f)).

On August 7, 1995 Department of Energy announced (60 FR 40164) its intent to prepare an EIS in accordance with Nuclear Waste Policy Act for a geologic repository at Yucca Mountain. The environmental issues to be examined in the Department of Energy EIS were identified as including "...the potential impacts associated with national and regional shipments of spent nuclear fuel and high-level radioactive waste from reactor sites and Department of Energy facilities to the Yucca Mountain site ...including impacts of constructing and operating a rail spur, a heavy-haul route and/or a transfer facility..." Following a 90-day scoping period which ended December 5, 1995, Department of Energy deferred action on the EIS until Fiscal Year 1997 for budgetary reasons.

- C. With respect to storage, transportation, and disposal, the fact that naval nuclear fuel is unique is a positive characteristic, not a negative one as the comment implies. A complete discussion of these unique characteristics of naval nuclear fuel is presented in Chapter 2, Section 2.3 of the EIS. Section S.2 of the EIS states that because of differences in configurations and sizes of naval spent nuclear fuel and assemblies, all of the alternatives would require containers to have internal baskets designed for specific spent nuclear fuel types. Evaluations completed to date show that naval spent nuclear fuel can be packaged into the conceptual multi-purpose canister without requiring any modifications to the previously planned disposal configuration at a geologic repository.
- D. The Navy will add a brief discussion of related civil actions to Chapter 8.
- E. 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, Sections 3.2, 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

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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 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 maximum regulatory package external exposure of 10 millirem per hour at 2 meters. 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.

It should be observed that containers used for legal-weight truck transfer would also be designed to produce a maximum exposure rate of 10 millirem per hour at 2 meters in accordance with the regulations and their use would present the same opportunity for the elevated vehicles to be in traffic with them as would occur for heavy-haul transport. Further, many more legal-weight truck shipments would be required to move all spent fuel. Text has been added to Chapter 3, Section 3.7 which summarizes the evaluation of legal-weight truck use.

The range of accidents analyzed in 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.

- F. Although the transportation analysis performed in this EIS is based on three potential rail routes, the scope of the analysis encompasses the different population densities of the rural, suburban and urban communities along the routes. The specific distances through the cities and towns along the way were considered and estimates were used for the population densities for cities along the way that are highly unlikely to be exceeded. The commenter is referred to Appendix B,

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Section B.3.2, B.4 and Table B.15 for the details of this portion of the analysis. The responses above provide the details of the evaluations of heavy-haul transport.

- G. 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 (Chapter 4, Section 4.8), loading and storage (Chapter 5, Section 5.8), and shipment over public transportation routes (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 7.4 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

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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.

- H. Since no repository or centralized interim storage site has yet been selected, this EIS uses a site being evaluated by Department of Energy pursuant to the Nuclear Waste Policy Act as the destination point for naval spent nuclear fuel shipments.

Management of spent nuclear fuel at a repository or centralized interim storage site will be the subject of the site-specific EIS for the particular 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.

In this EIS estimates of impacts are discussed and summarized in Chapter 3, Section 3.8.5 and are within the range of 1 to 4 percent of the total impact of civilian spent nuclear fuel management. An estimation of the total impact can be made by using that range and impacts provided in Chapter 3. Since transportation of spent nuclear fuel would be of primary interest to Clark County, Chapter 7, Section 7.3.7 provides the estimated cumulative impacts for transportation of all spent nuclear fuel to a geologic repository are described. These impacts are further described in the Department of Energy Programmatic Spent Nuclear Fuel and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Final Environmental Impact Statement of April 1995 in Appendix I of Volume 1.

- I. As stated in Appendix A, Section A.4, the probability of an airplane crash was evaluated for all locations, including the Nevada Test Site. Details of this evaluation are presented in the Programmatic SNF and INEL EIS and incorporated into the EIS by reference. This document (Volume 1, Appendix D, Table F.3-5) presents the site specific data, including details of the data for large civilian, large military, and military high performance aircraft used for the analysis. The results show that the probability of an airplane crash into dry storage containers at the Nevada Test Site is approximately 5×10^{-8} per year. Such an accident was, therefore, not analyzed in detail since accidents which are less likely than 10^{-7} per year are not expected to contribute in any substantial way to the risk and this is the case for this hypothetical accident.

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- J. Unloading operations were evaluated at a notional geologic repository to determine if there is a difference between container system alternatives. The results of this evaluation, presented in Appendix A, Table A.12, show that the Multi-Purpose Canister Alternatives would have a smaller environmental impact during operations at a repository surface facility since the canisters do not require opening. The analysis results suggest that a similar conclusion would be reached regardless of the meteorology and population distributions used. Site specific meteorology and population will be used as needed when appropriate environmental documentation is prepared for an interim storage facility or repository in accordance with the Nuclear Waste Policy Act.
- K. Appendix A, Section A.2.3 of the EIS was revised to incorporate this comment.