Yucca Mtn

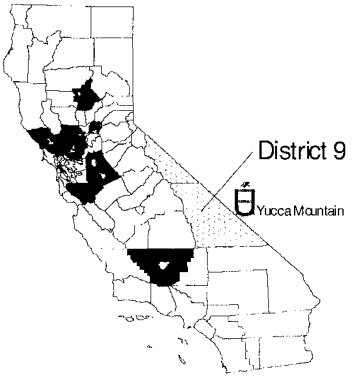
The Shipment of Spent Nuclear Fuel and High-Level Radioactive waste to the Proposed Nuclear Waste Repository at Yucca Mountain —a District 9 Perspective

Background

Since the advent of electric power generation through nuclear fission, utilities owning commercial reactors have had to store and monitor the spent nuclear fuel (SNF) resulting from the process of power generation. Currently there is about 40,000 MTHM[1] of SNF in storage throughout the United States, primarily at commercial reactor generator sites and a few storage facilities. An estimated 105,000 MTHM will have been generated by existing power plants by the end of their license periods (assuming no renewals), in about 2046. The United States has decided that deep geologic disposal of SNF assemblies is the most appropriate means of dealing with this material, and has included in this disposal option the high-level radioactive waste generated through the production of fissile materials in the nuclear weapons program. The Department of Energy (DOE) recently issued a Draft Environmental Impact Statement (DEIS) for the Yucca Mountain, Nevada location that has been under study since 1982. The comment period for this document closes on February 9, 2000.

Issues

District 9 has been following the studies at Yucca Mountain for many years, due in large part to the proximity of Yucca Mountain to the District. Working in cooperation with Inyo County, the District has performed studies of the existing traffic volumes and vehicular mix on Route 127. District representatives have attended local, regional, and national meetings concerning this issue to gain a more complete understanding of the issues. We have coordinated our review of issues with planning staff from District 8, which has responsibility for a portion of Route 127 and for a portion of Route 15.



[1] MTHM: metric tons of heavy metal. A measure of the quantity of spent nuclear fuel that does not include the weight of cladding or of fuel assembly structural components.

The transportation of radioactive materials creates both real and perceived risks. Radioactive materials transportation campaigns have faced tremendous public opposition due to fears about the potential exposures involved in both routine transport and under accident conditions. In addition to potential response to a radiological incident resulting from the transportation of materials to the proposed repository at Yucca Mountain, Caltrans has to consider the potential impact to the transportation system of the routine shipment of radiologic materials to Yucca Mountain. Finally, Caltrans must consider the cumulative impact of radioactive materials shipments by the DOE from all programs. In the Waste Management Programmatic Environmental Impact Statement (, the DOE Office of Environmental Management considered the potential cumulative impact of the shipment of low-level waste, low-level mixed waste and high-level waste within their system. This document states:

"The largest number of shipments to or from a single site could occur at NTS as a result of the shipments of LLMW and LLW and of shipments of HLW if Yucca Mountain is found to be suitable as a repository for HLW. A combined total of more than 295,000 truck shipments or more than 106,000 rail shipments of waste could occur at NTS, or about 118 truck shipments or 42 rail shipments per day (assuming receipt of shipments during 250 days per year)." [NTS is the Nevada Test Site, immediately adjacent to Yucca Mountain]

While this must be considered the upper bound for number of shipments, as it represents a scenario where the Nevada Test Site is the sole disposal location, any review of the potential transportation impacts from transport to Yucca Mountain should also consider other radiologic shipments that may also occur.

The following comments represent some of the areas of concern for District 9:

- District 9 is responsible for the area directly across the state line from the area of the depository. However, the Draft Environmental Impact Statement (EIS) and the Proposed Action Alternative do not propose any shipment along any of the State Highways within the District 9 area. One or more of the highways in the district do run in the direction of the Depository but they are low level state highways and in our opinion, not suited for the transport of High Level Nuclear Waste.

- There is also no proposal to use California as a corridor for radioactive waste shipments through the State, except for shipments from our northern neighbors. We recommend that the State go on record against any additional through shipments (besides those from Oregon and Washington States). Specifically, there have been some discussions about using State Routes 40 and 127 to bypass the Las Vegas Valley for low-level shipments. The concern is that these proposals could create a precedent for high-level shipments due to concern from the State of Nevada and the local governments and populace in the Las Vegas area. Highway 127 is a secondary, class III highway and significant study and improvements would be necessary before any consideration of its use is made. Additionally, there is considerable political pressure to avoid re-routing into California radioactive waste shipments from the East bound for the Nevada Test Site. Senators Boxer and Feinstein, and Congressmen Farr and Lewis have written opposing the diversion of these shipments into California. The issue has become politically sensitive, with local governments in California and Nevada on record as opposed to shipments through their areas.

- The use of I-5 for north/south shipment of material also brings up some planning concerns for District 9, such as: should the routing be changed to use Highway 58 to bypass the Los Angeles and Riverside/San Bernardino Basins? This would bring the shipments through a section of District 6 for which District 9 has planning and Maintenance responsibilities. Highway 58 is also not appropriate for such shipments at this time, however, major improvements are being planned for this highway over the next 20 to 30 years (The information concerning Hwy 127 and 58 should not be included in any response to the federal government since we believe it is not in California's best interest to suggest or promote either of these two alternatives. It is important that our state representatives to this process be aware of these alternatives and be prepared to oppose such suggestions, unless impacts are properly mitigated.)

  - Any change to the current proposed routing within California would require a complete environmental review similar to the one currently taking place, including the preparation of the appropriate environmental documents. However, the use of RADTRAN for the estimation of potential radiological exposures is not appropriate on

State Routes, without significant adjustment to account for geometrics, etc.

- The uncertainty regarding specific routes, shipment volumes, cask sizes, etc. make it difficult to estimate potential impacts. The DEIS should be revised to reduce these uncertainties.