STATEMENT OF ROBERT A. LAURIE, COMMISSIONER
CALIFORNIA ENERGY COMMISSION

TO THE U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

REGARDING THE DRAFT 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

Presented at the Public Hearing
In San Bernardino, California
February 22, 2000

On behalf of the State of California I would like to thank the Department of Energy for providing this additional hearing in California. My comments here today are intended to provide constructive criticisms to help focus future revisions of the EIS so that they reflect the significant issues and concerns in California regarding potential impacts from the proposed high-level radioactive waste repository at Yucca Mountain.

Let me begin by stating that the Proposed Action described in the Draft EIS will have significant impacts, both probable and potential, in California. In light of the magnitude of these potential impacts, California agencies undertook a detailed evaluation of the Draft EIS. Thirteen California entities with regulatory authority and/or expertise in transportation, water quality, hydrogeology, and environmental impacts participated in this collaborative review and comment on the Draft EIS. The review was conducted through a cooperative interagency effort that was coordinated by the California Energy Commission. Participating agencies included the California Departments of Conservation, Fish and Game, Health Services, Parks and Recreation, Transportation, Water Resources, and the Governor's Office of Emergency Services, Energy Commission, Highway Patrol, Public Utilities Commission, Toxic Substances Control, Water Resources Control Board, and the Lahontan Regional Water Quality Control Board. Individual agency comments on the Draft EIS were integrated into a set of written comments that was mailed last week to the Department of Energy. My testimony today will focus on the three areas identified in this review that most directly impact the State of California: (1) transportation impacts; (2) the potential groundwater impacts in the Death Valley region; and, (3) impacts on wildlife, habitat and public parks.

In general, we find the Draft EIS to be deficient in its superficial and incomplete discussion of potential transportation and groundwater impacts in California. Specifically, it is our conclusion that the Draft EIS is inadequate and incomplete because it fails to: 1) fully consider transportation impacts from the proposed project, 2) fully evaluate realistic project alternatives, 3) identify and analyze potential route-specific and modal specific impacts to populations and the environment along shipment corridors, 4) adequately evaluate potential groundwater impacts in California, 5) address issues

important to California that were identified early on in the public scoping process (particularly the scoping hearing in Sacramento in 1995), and 6) provide adequate notice to impacted communities along transportation corridors of the significant transportation impacts from the proposed project. Without this information, affected communities, public stakeholders, and decision-makers have an insufficient basis upon which to make decisions regarding the Proposed Action described in the Draft EIS.

Over the past two decades, California has provided input into federal nuclear waste management and transportation policy development programs for DOE nuclear waste shipments, including shipments planned by the Office of Civilian Radioactive Waste Management. In 1995, California Energy Commission staff, on behalf of the Western Interstate Energy Board's High-Level Radioactive Waste Committee, testified before DOE on their Notice of Intent to prepare an EIS for the repository at Yucca Mountain. Our testimony emphasized western states' concerns regarding the safety of nuclear waste shipments to Yucca Mountain and the need for the EIS to closely examine the varying impacts on states and tribes that such an extended, massive-scale shipping campaign would have. In our testimony, we urged DOE to conduct route and mode-specific analyses of transportation impacts as part of the Yucca Mountain EIS and to fulfill DOE's promise, as stated in DOE's 1986 Environmental Assessment for the Yucca Mountain project, to conduct in-depth route and mode-specific analyses. However, despite states' requests and DOE's commitment to conduct route and mode-specific analyses as part of the EIS process, the Draft EIS provides only generic analyses of these impacts. It does not identify the routes and transport modes for these shipments and does not provide a route-specific analysis of impacts.

In addition, in 1989, California's Interagency High-Level Waste Task Force, coordinated by the California Energy Commission, provided comments on DOE's Site Characterization Plan regarding its adequacy for evaluating potential groundwater impacts in California from the proposed Yucca Mountain project. We identified as a major concern the potential migration of radionuclide contaminants into eastern California aquifers, including the Death Valley groundwater basin, resulting from an accidental radionuclide release at the Yucca Mountain site. We also recommended scientific analyses that were necessary to help evaluate such potential impacts. However, the Draft EIS does not reflect California's recommendations for evaluating these potential groundwater impacts from the proposed repository. We consider the inadequacies of the Draft EIS's discussion and analyses regarding potential groundwater and transportation impacts in California to be serious deficiencies.

GENERAL NEPA INADEQUACIES OF THE DEIS

The Draft EIS fails to comply with the procedural and substantive requirements of the National Environmental Policy Act by failing to: 1) provide an adequate scoping process, 2) provide a complete and accurate project description, including full disclosure of potential transportation and groundwater impacts, 3) evaluate reasonable alternatives, 4) provide adequate notice of public hearings, 5) adequately evaluate the affected environment, and 6) adequately evaluate potential environmental consequences from the alternatives and the proposed action. Although DOE held 15 public scoping meetings across the country, including one in Sacramento, the Draft EIS does not reflect the scope of issues raised at these meetings, such as explicit requests made by California that DOE conduct route and mode-specific analyses of transportation as part of the Yucca Mountain EIS. Under federal law, the alternatives section is considered the

"heart of the environmental impact statement" (40 CFR S 1502.14). The EIS is required to rigorously explore and objectively evaluate all reasonable alternatives. Yet, the Draft EIS only examines two no-action scenarios, namely waste remaining in storage for 10,000 years with either (1) institutional controls for the full 10,000 years (extremely costly) or (2) institutional controls remain in effect for just 100 years (disastrous consequences in radionuclide leakage into the environment). The Draft EIS recognizes that both scenarios are unlikely. Further, the notice for the public hearings for the Draft EIS is seriously deficient by failing to identify rail and truck routes through California and potentially impacted communities. These communities have no means of evaluating the relevance of a repository in Nevada, unless potential routes and impacts are disclosed in the EIS.

OVERVIEW OF POTENTIAL IMPACTS IN CALIFORNIA

Transportation: There will be significant transportation impacts in California from the proposed Yucca Mountain repository. California has four operating commercial nuclear power plants, three commercial plants being decommissioned, and is a major generator of spent nuclear fuel. Spent fuel is now being temporarily stored at these reactor sites and at five research reactor locations throughout the State. Under DOE's plans, spent nuclear fuel from two of California reactors is scheduled for transport during the first year that shipments occur.

In addition, DOE could route through California a major portion of the Yucca Mountain shipments. Nevada officials estimate that 74,000 truck shipments (three-fourths of the total shipments to the repository) of spent fuel and high-level waste could be transported through California to Yucca Mountain under DOE's "mostly truck" scenario, an average of five truck shipments daily for 39 years. Under a mixed truck/rail scenario, an estimated 26,000 truck shipments and 9,800 rail shipments could be transported through California to the Yucca Mountain site. Our concern about DOE's possibly routing through California a major portion of these shipments was heightened recently when DOE announced their decision to reroute through Southern California, including SR-127, thousands of low-level radioactive waste shipments from eastern states to the Nevada Test Site, in response to Nevada and Arizona's requests to avoid shipments through Las Vegas and over Hoover Dam.

<u>California's Concerns:</u> The Draft EIS failed to identify shipments routes, modes, number and characteristics of shipments, and only superficially discussed transportation impacts. The logistics and risks associated with these shipments should be addressed in the Draft EIS. Transportation is the single area of the repository project, which will impact the most people and should be discussed thoroughly in the EIS.

DOE's possible routing through California, especially along SR-127, of a large portion of these shipments to Yucca Mountain is a major concern. SR-127 road conditions, flash flooding, seasonal peaks in tourism, scarcity and long response time for emergency response to a shipment accident, and impacts on the road infrastructure from increased heavy truck traffic are of serious concern.

Water Quality and Quantity: Inyo County, California, testified before DOE regarding the long-term threat that the Yucca Mountain repository poses to regional groundwater supplies and to communities east of Owens Valley. They noted that hydrologic studies conducted by Inyo County and Nye and Esmeralda Counties in Nevada point to the

existence of a continuous aquifer running from beneath Yucca Mountain south to Tecopa, Shoshone and Death Valley Junction. These studies indicate that water flowing beneath Yucca Mountain flows generally south to become surface water and groundwater flowing into Death Valley that is used for commercial and domestic purposes and supports natural habitats. Some of these springs also support populations of a number of threatened or endangered species.

California agencies concluded that DOE should more fully evaluate potential pathways for radionuclides reaching regional groundwater supplies in eastern California, such as in the Death Valley region. The EIS should also evaluate the effect of DOE's proposed groundwater extraction in Jackass Flats on the flow of groundwater to discharge areas of the regional aquifer in California. DOE's proposed groundwater extraction at Jackass Flats will decrease the amount of water that flows through the aquifer and is discharged at down-gradient springs and wetlands. Better data and more realistic models are needed to evaluate groundwater flow and radionuclide migration toward California aquifers. In addition, DOE needs to describe how they will monitor or detect migration of radionuclides from the repository.

California's Concerns: The Proposed Yucca Mountain design considers the possibility of radionuclide containment failure, and incorporates engineered barriers, as well as reliance on natural barriers to mitigate the consequence of radionuclide leakage. We agree that the possibility of failure should be considered in the repository design, and in the evaluation of potential environmental consequences. However, additional data coupled with more realistic models of radionuclide migration are needed to make an adequate determination on potential impacts. Further, the Draft EIS does not describe future monitoring of groundwater flow with the goal of detecting any migration of radionuclides from the repository. Similar to the status of groundwater transport modeling, there is very limited data that supports only elementary models of barrier performance. These give rise to significant uncertainties regarding long-term performance of each barrier to radionuclide contamination. The degree of scientific uncertainty surrounding the repository appears to be too high to support a reasonable decision on the adequacy of the Yucca Mountain site. These uncertainties include: 1) the corrosion rate of waste packages, 2) disagreement on groundwater levels and aquifer conductivity estimates, 3) the influence of heat on water movement, 4) differing opinions about the solubility and release of radionuclides into the environment, and 5) uncertainty regarding water seepage through the walls of the repository.

Impacts on Wildlife, Habitat, Public Parks: California's State Park System contains 265 park units encompassing 1.4 million acres within which the State is responsible for preserving representative samples of the State's extraordinary biological resources and diversity. Nearly half of these park units, including State Parks, State Historic Parks, State Beaches and State Recreational Areas, are located along potential spent fuel shipment routes in California. In addition, the Death Valley National Park is located adjacent to potential routes in California.

California's Concerns: California agencies, as well as the Superintendent of Death Valley National Park, expressed concern about potential transportation impacts in the Death Valley region as well as impacts from these shipments on parks adjacent to shipment corridors. These regions have remote and very limited emergency response capability. In addition, there is concern about the potential impacts on plant and animal populations in the Death Valley region in the event of radionuclide contamination and

migration in groundwater, as well as potential adverse impacts on desert bighorn sheep from any roadway or rail construction or improvements.

CONCLUSION

In conclusion, the information and analyses provided in the Draft EIS are insufficient to support a well-informed decision regarding the adequacy of the Yucca Mountain site for a high-level radioactive waste repository and the potential impacts that could result from the construction, operation and closure of this repository. In particular, the Draft EIS ignores explicit requests made by California and other states that DOE conduct during the EIS process a route-and-mode-specific analysis of potential impacts from shipments to the proposed repository. Further, the Draft EIS provides an inadequate analysis of potential water quality and water quantity impacts in California from the Proposed Action. DOE should prepare a separate Draft EIS that provides a comprehensive, route-specific discussion of potential transportation impacts from the proposed repository and should provide a more thorough discussion and analysis of potential radionuclide migration in groundwater and in California. Absent this information, as discussed in greater detail in our written comments on the Draft EIS, there is insufficient information available to allow reasonable evaluation of the potential impacts in California from the proposed repository.