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December 18, 2007

Jane R. Summerson
M. Lee Bishop
Environmental Impact Statement Office
U.S. Department of Energy
Office of Civilian Radioactive Waste Management
1551 Hillshire Drive
Las Vegas, NV 89134

Re: Inyo County's comments on draft Repository Supplemental Environmental Impact Statement and draft Nevada Rail Corridor/Alignment Environmental Impact Statement

Dear Ms. Summerson and Mr. Bishop,

The County of Inyo, State of California, is an Affected Unit of Local Government under the Nuclear Waste Policy Act of 1987, as amended. Inyo County has prepared its response to the U.S. Department of Energy's (DOE) draft Repository Supplemental Environmental Impact Statement and draft Nevada Rail Corridor/Alignment Environmental Impact Statement.

The County has identified several issues regarding both documents that should be addressed by the DOE in the course of developing both Final Environmental Impact Statements (EIS). A supplement to the comment letter has also been attached and offers technical details of Inyo County's groundwater studies program, its main findings, and specific recommendations for the Final Repository Environmental Impact Statement.

Failure to Define the Affected Environment Correctly - Inadequate analysis in the draft Repository Supplemental Environmental Impact Statement relating to groundwater impacts to the Lower Carbonate Aquifer

The draft Repository Supplemental EIS (draft SEIS) gives an adequate description of individual groundwater basins, recharge sources, water uses, and major subterranean geologic characteristics. The SEIS also gives a brief summary of Inyo County's groundwater studies program, mentioning that a primary focus of the County "has been the investigation of the source of water that discharges from the various springs on the east side of Death Valley and whether there is a hydraulic connection between those springs and the groundwater moving beneath Yucca Mountain." The County has amassed a body of strong scientific evidence through geochemical analysis that the Lower Carbonate Aquifer (LCA), which underlies the repository, has several discharge points on the western side of the Funeral Mountains in the Furnace Creek area of Death Valley National Park (Park). The County also recognizes, as does the draft SEIS, that groundwater discharged in the Park is mixed with other groundwater sources from the Ash Meadows area and the Amargosa Desert.

The draft SEIS makes mention of an independent study, conducted by the University of Nevada, Las Vegas, that substantiates this theory of carbonate flow discharging in to the Park. The brief section describing Inyo County's program also concludes that flow from volcanic aquifers does not discharge into the Park. While this statement is correct, it misinterprets the purpose of Inyo's program, which is to study whether the LCA, and not volcanic aquifers, discharge in to the Park. The DOE assumes that because the volcanic aquifers do not discharge in to the Park, that no impacts to the Park are anticipated. This is an erroneous statement, as Inyo County believes that the Park will be potentially affected by contaminated discharge from the LCA, and **not** the volcanic aquifers. It should also be noted that the DOE concedes that Inyo County, but not the Park, will be impacted from contaminants in the volcanic aquifers. Radionuclides in the volcanic aquifers will surface at Franklin Lake Playa and Alkali Flat, near Death Valley Junction, California. However, the DOE predicts this will happen after any applicable compliance period.

From Inyo County's perspective, the most glaring omission in the draft SEIS is that it contains no meaningful assessment of potential impacts to the LCA. The draft SEIS makes no predictions, based on water infiltration and waste package corrosion rates, or groundwater migration times, of the severity or timeframe for impacts to the LCA, or its discharges points in the Park. Accordingly, the draft SEIS contain no impact assessment for plant life, wildlife, wildlife habitat or drinking water supplies in the Park that could potentially be impacted by migrating radiouclides from the repository.

The 2002 Final Environmental Impact Statement for a Geologic Repository at Yucca Mountain, Nevada (2002 FEIS) frequently references ongoing studies relating to groundwater impacts, but the draft SEIS contains little new information on studies conducted by the DOE, the State of Nevada, or Nye and Inyo Counties. DOE concedes that Death Valley proper is the regional hydrological sink for surface and groundwater, yet Inyo County is scarcely mentioned in terms of groundwater impacts from the repository. The Yucca Mountain regional hydrographic map on page 3-33 (Figure 3.9) in the "Affected Environment" section conveniently omits California in terms of hydrographic areas, even though maps on pages 3-28 (figure 3-7) and 3-30 (Figure 3-8) clearly show Inyo County and Death Valley as part of Death Valley regional groundwater flow system, receiving flow from both the volcanic aquifers and the LCA.

Failure to Define the Affected Environment Correctly - Inadequate analysis in the draft Repository Supplemental Environmental Impact Statement relating to groundwater pumping in the region, its effects on repository compliance and groundwater migration from the repository

Currently, an upper gradient exists in the LCA, which causes LCA water to move upward in to the volcanic aquifers because of a steep down gradient found in the vicinity of Yucca Mountain. The DOE argues that the upper gradient will prevent migration of radionuclides from the repository to the LCA. While Inyo's scientific data supports this conclusion, the upper gradient is ephemeral and very fragile. The County believes that the upper gradient could be degraded by regional groundwater pumping, both from the LCA and volcanic aquifers. The DOE maintains that the future effects of groundwater pumping are highly speculative, and need not be considered in any NEPA analysis. Therefore, there is no analysis from groundwater pumping in the region, and no regulatory measures to maintain the upper gradient. Inyo County strongly disagrees with this assertion. At the very least, the County believes that the DOE should consider present pumping rates and its impact on the upper gradient and radionuclide migration. Any NEPA analysis of repository performance and radionuclide migration that does not take into account the effects of groundwater pumping is incomplete and completely inadequate.

Clean up or remediation plan for radionuclides surfacing at Alkali Flat/Franklin Lake Playa

The 2002 FEIS states that water from beneath Yucca Mountain surfaces at Alkali Flat and Franklin Lake Playa, and the 69,000 people could be exposed to contaminated groundwater. The County recognizes that NEPA does not require mitigation measures. However, the County believes it is the DOE's responsibility to implement a mitigation/remediation plan, and an evacuation plan should the repository suffer a catastrophic failure.

Inadequate analysis relating to socio-economic impacts to Inyo County

The DOE considers Inyo County outside the "region of influence" for socio-economic impacts analysis under NEPA. Inyo County strenuously disagrees with this assertion, as the repository is approximately 15 miles from the Inyo County line and the boundary for Death Valley National Park. The Park has approximately 700,000 visitors a year, many of whom are foreign tourists. The County relies heavily on tourism revenues from the Park, as well as other regional attractions, such as the China Date Ranch, the Amargosa River, bird watching, and local mineral baths. The County is concerned about reduced tourism revenues, as well as decreases in real and business properties, from repository operations and the transportation of nuclear materials through the County. Therefore, Inyo County should be considered within the "region of influence" for socio-economic impacts analysis because of its proximity to the site. Without meaningful analysis in the 2002 Final EIS, and now the draft SEIS, the DOE's impact assessment of socio-economic impacts in Inyo County is incomplete and entirely inadequate because it fails to define the region of influence for the impacts created by the proposed action or due to reasonably foreseeable alternatives.

Inadequate analysis relating to reasonable alternatives to the Caliente Rail Corridor

The draft Rail EIS states that if the Caliente Rail Corridor is not completed, that the future course is "uncertain" with regards to transportation of nuclear materials to Yucca Mountain. Inyo County believes that if the Caliente Rail Corridor fails, truck transport will become the preferred method of transportation to the repository. Yet the draft Rail Corridor/Alignment EIS contains no analysis for a mostly truck shipping scenario, which should be considered a reasonable alternative, given the massive uncertainty surrounding the Caliente Rail Corridor. This will be the largest rail construction project in 80 years, and will cost \$2.5-\$3 billion dollars to complete the rail line. The Caliente Rail Corridor also faces several engineering challenges, as the route traverses seven north-south mountain ranges with steep grades, and numerous areas prone to flash flooding. The Caliente Rail Route will also impact grazing allotments by local ranchers, and require approximately 175 new groundwater wells to be drilled along the route to support construction. Given the uncertainty with cost, engineering challenges, and land-use conflicts, the prospects of the Caliente Rail Corridor being completed is highly questionable. Therefore, the DOE should be required to analyze a "mostly truck" shipping campaign as a reasonable alternative to the Caliente Rail Corridor.

Inadequate analysis of impacts relating to the movement of construction equipment and personnel on Highway 127 for the Caliente Rail Corridor

Finally, the draft Rail EIS gives no impact assessment of construction equipment and personnel traveling on Inyo County highways for construction of the portion of the Caliente Rail Corridor which parallels Nevada Highway 95, south from Tonopah, Nevada to the repository site. The County believes it is highly likely that the DOE will move construction equipment along California Highways 127 and 178 because of their close proximity to the Caliente Rail Corridor. This has the potential to increase the volume of traffic on these County highways and impact air quality, yet the draft Rail Alignment/Construction EIS makes no such prediction or assessment of potential impacts. The DOE should analyze the impacts of increased traffic volumes to Inyo County on Highways 127 and 178 in the Final Rail EIS.

Transportation, Aging, and Disposal Canister

The Transportation, Aging, and Disposal (TAD) canister is a multi-purpose canister designed to simplify the transport process and reduce exposure to highly radioactive spent fuel rods. The TAD utilizes one packaging system for spent fuel when it leaves the reactor site.

Use of the TAD canister system will significantly increase workers' radiological exposure and the risks associated with handling bare spent fuel assemblies, and loading and welding canisters at reactor sites. There also are uncertainties regarding acceptance of the TAD canisters at the repository and the potential return of rejected TADS to originating sites. The Final SEIS should thoroughly assess the risks

and impacts to workers, surrounding communities, the environment, and populations in transit (highways, rail) at reactor sites from using the TAD system. In addition, the Final EIS should analyze how the TAD system will interface with the dry cask storage system at reactor sites as well as analyze its costs and financial arrangements for paying for the TAD system at reactor sites. All four California commercial reactor sites (Diablo Canyon, San Onofre, Rancho Seco, and Humboldt Bay) may have specific problems with the proposed TAD system. All commercial reactors in California are either planning to transfer or have transferred all or a portion of their spent fuel into dry cask storage. Finally, because TADs will be packaged by the individual utilities offsite and then shipped to Yucca Mountain, inspection of the TAD by the DOE before emplacement is critical to the repository's performance.

The Final EIS also should assess how the TAD system would work at decommissioned reactors where the spent fuel handling equipment and facilities have been removed and no longer remain onsite. All of the spent fuel at Rancho Seco, which is in the final stages of decommissioning, has been transferred into dry storage using multi-purpose canisters. The Final SEIS should evaluate how the TAD system would work at decommissioned reactors, where spent fuel handling equipment and facilities have been dismantled and removed from the site. The Final SEIS should identify who is responsible for building facilities to house spent handling operations and how would the costs, liability, and impacts associated with transferring spent fuel into TADs at reactor sites would be handled. About 10% of all spent fuel rods have broken due to gamma ray exposure during fission. These broken rods are not compatible with the TAD. Consequently, the Final EIS should identify and analyze how these broken rods will be shipped to the repository. Inyo County also remains concerned that the TAD will not be certified by the U.S. Nuclear Regulatory Commission before submission of the DOE's License Application. Given the massive uncertainty surrounding the TAD, the Final SEIS must evaluate alternatives if the TAD system does not prove to be suitable, due to its cost and/or risk.

Potential truck transportation of nuclear materials on California Highways 127 and 178

Inyo County remains very concerned about the potential for nuclear materials to be shipped to Yucca Mountain on California State Highways 127 and/or 178 given the uncertainties surrounding the Caliente Rail Corridor. While these alternative truck routes have not yet been designated, the Draft SEIS estimates that approximately 755 rail casks would be transported through California (8% of total shipments) and 857 truck casks (32% of total) if the Caliente Rail Corridor is constructed and used. It should be noted that the State of Nevada has estimated a potential for larger numbers of rail cask shipments to Yucca Mountain through California for both the Caliente Rail Corridor (as many as 4,400 casks or 45% of the total shipments). Under the terms of the standard contracts between the DOE and the utilities, 47% of the waste shipments in the first five years of the program will originate at sites without rail access. There will be a huge incentive for DOE to begin its shipping campaign with truck shipments.

California Highways 127 and 178 began originally as wagon routes across the desert, and do not take into account the engineering demands that a prolonged truck shipping campaign of nuclear material will place on the roadways. These highways are inadequate for a truck shipping campaigns for many reasons:

1. Two-lane highway from San Bernardino County line to Nye County line
2. Limited passing lanes
3. Limited areas of highway shoulder
4. Few turnoffs
5. Flooding from the Amargosa River during spring run off or during other flood events

The first responder to any release of nuclear material in Southeast Inyo County is the Southern Inyo Fire Protection District (SIFPD). The SIFPD has a volunteer staff of approximately 10, with one full time paid employee who acts as Chief. Response times vary based on the location of an incident. In the past, the

SIFPD has received limited training to respond to a nuclear release through the DOE's Training Emergency Preparedness Program (TEPP). It is anticipated that the SIFPD would need numerous full-time, paid employees, in addition to its current volunteer staff, if a shipping campaign to Yucca Mountain is initiated. In addition, the SIFPD would need specialized equipment and detection devices, along with a rigorous training plan to adequately deal with a release of radionuclides in Southeast Inyo County.

The nearest major hospital facilities are in Las Vegas or Barstow, depending on the site of the incident. It is unclear whether these facilities are properly equipped or trained to handle persons who have been exposed to radioactive materials. Travel times to these facilities range from one and a half to three hours away from potential truck shipping routes in Inyo County. Currently, there is no regional communication network that could alert residents and visitors to a radioactive release.

The DOE maintains that these routes are currently not under consideration as truck transport routes. However, due to lingering uncertainties regarding the TAD canister, the Caliente Rail Corridor, and Clark County's steadfast opposition to nuclear shipments through Las Vegas, truck transport appears to be the most probable method of transporting nuclear materials to Yucca Mountain. This belief is further strengthened by the fact that the DOE currently uses State Highway 127 and 178 for low-level waste transport to and from the Nevada Test Site.

The County believes that Section 180 (c) of the Nuclear Waste Policy Act, which provides grants to affected states and tribes for response training, is ineffective both in funding and scope, to adequately train emergency responders to deal with a nuclear release. Modeling indicates that the State of California will only receive approximately \$200,000 to distribute to the hundreds of local jurisdictions and first responder agencies.

Other Transportation Issues

The Draft SEIS does not consider "worst-case" accidents in its NEPA analysis because such combinations of factors were considered "not reasonably foreseeable." Yet, the Draft SEIS acknowledges that clean-up costs after a very severe transportation incident involving a repository shipment resulting in the release of radioactive material could range from \$300,000 to \$10 billion. The Final SEIS should evaluate the impacts from a credible worst-case transportation accident or terrorist attack, as well as other accidents scenarios caused by human error.

A National Academy of Sciences (NAS) study recommended that detailed surveys of transportation routes for spent fuel be done to identify potential hazards that could lead to or exacerbate extreme accidents involving very long duration, fully engulfing fires and that steps should be taken to avoid or mitigate such hazards. The Final SEIS should identify the shipping corridors and include route-specific analyses that identify potential hazards along shipment routes. The risk analyses should include the potential consequences of a severe accident or terrorist attack involving extreme, long duration fire conditions that exceed package performance requirements. The Final SEIS should also consider the impact of human error as well as the potential for unique local conditions to exacerbate the

consequences of accidents or terrorist attacks. Certain segments of possible routes in California could provide conditions in which an accident or terrorist attack could exceed the spent fuel packaging performance requirements. Two major highway accidents that occurred this year on California highways (one in the Bay Area and one in Santa Clarita tunnel fire) are being investigated to determine whether these accidents may have resulted in conditions, in particular fire temperatures and fire durations, which approached or exceeded packaging performance requirements. Similarly nearly half of the 16 historical severe accident scenarios that were examined in the NAS 2006 study on spent fuel transport safety occurred in California. The Final SEIS should examine credible accident scenarios that could exceed packaging performance standards.

In the draft Rail EIS, the DOE proposes to ship newer spent nuclear fuel first, contrary to the recommendation made by the NAS that the oldest spent fuel be shipped first to the repository. This recommendation was proposed because fuel that has aged fifty or more years contains significantly less amounts of Cesium-90 and Strontium-90. These radioactive isotopes present the most substantial risk to workers who package the spent fuel for transport, and those involved in the actual transport of spent fuel. Inyo County recommends that the Final Rail EIS incorporate the NAS's recommendation of the oldest fuel being shipped first to Yucca Mountain.

No final U.S. Environmental Protection Agency compliance standard

The final U.S. Environmental Protection Agency (EPA) rule regarding acceptable radiation dose rates at the compliance point, located near Nevada Test Site Gate 5-10, has not yet been finalized. It should be noted that this is the only compliance point for the entire repository. The compliance point also appears to have been selected because it is at the far southern boundary of the Nevada Test Site, rather than for any unique radionuclide detection capabilities. Without any final standard, it is impossible for Inyo County to assess and verify the DOE's claims of compliant repository operations. Therefore, the final Repository EIS should incorporate the EPA's final rule regarding acceptable radiation releases from the repository.

Emergency preparedness in Southeast Inyo County

The first responder to any release of nuclear material in Southeast Inyo County is the Southern Inyo Fire Protection District (SIFPD). The SIFPD has a volunteer staff of approximately 10, with one full time paid employee who acts as Chief. Response times vary based on the location of an incident. In the past, the SIFPD has received limited training to respond to a nuclear release through the DOE's Training Emergency Preparedness Program (TEPP). It is anticipated that the SIFPD would need numerous full-time, paid employees, in addition to its current volunteer staff, if a shipping campaign to Yucca Mountain is initiated. In addition, the SIFPD would need specialized equipment and detection devices, along with a rigorous training plan to adequately deal with a release of radionuclides in Southeast Inyo County. The Final Rail EIS should incorporate the DOE's contingency plans for any type of radioactive release in Inyo County.

Impacts to the Timbisha Shoshone Tribe

The U.S. Department of the Interior has recognized the Timbisha Shoshone Tribe as an "affected Indian tribe" under the Nuclear Waste Policy Act. Neither the draft SEIS nor the draft Rail EIS recognize the proximity of the tribe to the site and the likely impacts that will be felt throughout each phase of the Yucca Mountain Project by the Timbisha Shoshone. The final EIS's should assess and analyze impacts to the tribe's drinking water supply, impacts from truck transport of nuclear materials through tribal lands, socio-economic impacts, impacts to cultural resources, and environmental justice issues.

NEPA Procedural Concerns

The spirit and intent of NEPA is to maximize public input regarding the environmental impacts of actions undertaken by federal agencies. NEPA public meetings allow impacted citizens and other members of the public the opportunity to formally comment on any potential impacts on federal projects. The DOE has scheduled only one public meeting for all three NEPA draft EIS's in the State of California. California will be highly impacted from the Yucca Mountain Project, specifically from the transportation of nuclear materials in the state. It is estimated that 7.5 million people in California live within one mile of federal interstates that will be used for shipment. One meeting is wholly inadequate, given the anticipated impacts to the state, for citizens to participate effectively in the NEPA process. Additionally, the single meeting location, in Lone Pine, California, is in an area that will experience little to no impact from the Yucca Mountain Project. Finally, Inyo County would recommend that question and answer periods during any public hearing be placed on the administrative record.

Thank you for the opportunity to comment on the draft Repository SEIS and the draft Rail EIS. Inyo County believes that its comments will allow the DOE to make the most informed decision regarding impacts to Inyo County, the severity of such impacts, and appropriate mitigation measures.

Please contact Matt Gaffney, Project Coordinator, Yucca Mountain Repository Assessment Office, at (760)-873-7423 if you have any questions.

Sincerely,



Supervisor Jim Bilyeu, Chairperson
Inyo County Board of Supervisors