

Yucca Mountain Repository Assessment Office

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My name is Matt Gaffney, Project Coordinator for Inyo County's Yucca Mountain Repository Assessment Office. These are preliminary comments prepared by staff. The County is still in the process of assessing all three documents. The Inyo County Board of Supervisors will submit written comments in December to the U.S. Department of Energy that will represent Inyo County's final comments for the administrative record.

1. Inadequate analysis in the draft Repository Supplemental 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 in to 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 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 discharge 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 radionuclides from the repository.

The 2002 FEIS frequently reference 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. The 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.]

2 [**2. Inadequate analysis in the draft Repository Supplemental 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 County'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.]

3 [**3. 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 strongly urges the DOE's to implement a mitigation/remediation plan, and an evacuation plan should the repository suffer a catastrophic failure.]

4 [4. 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 800,000 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.]

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5 [5. Inadequate analysis relating to reasonable alternatives to the Caliente Rail Corridor

The draft Rail Corridor/Alignment 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. *under NEPA (and here)*

6 [6. Consideration of worst case scenario accidents

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.]

7 [**7. Inadequate analysis of impacts relating to the movement of construction equipment and personnel on Highway 127 for the Caliente Rail Corridor**]

The draft Rail Corridor/Alignment 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 Corridor/Alignment EIS.]

8 [**8. 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. 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. 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 EIS 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. The Final SEIS should also evaluate the alternatives if the TAD system does not prove to be suitable, due to its cost and/or risk.]