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ON THE U.S. DEPARTMENT OF ENERGY 
DRAFT REPOSITORY SEIS AND DRAFT RAIL ALIGNMENT EIS 
LAS VEGAS, NEVADA 
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Spent Nuclear Fuel is lethal. Spent nuclear fuel (SNF) from nuclear power plants would comprise about 90 percent of the wastes shipped to the repository. The SNF that DOE plans to ship is so radioactive that even after 10 years of cooling, unshielded exposure to a single fuel assembly could deliver a lethal dose (600 rem) of radiation in 1-2 minutes.

Each shipping cask would contain an enormous amount of radioactive material. Fission products, especially Strontium-90 (half-life 28 years) and Cesium-137 (half-life 30 years), account for most of the radioactivity in SNF for the first hundred years after removal from reactors. Each truck cask of commercial SNF would contain more than 350,000 curies of radioactive cesium and strontium, about 20-30 times the amount of those fission products released by the Hiroshima bomb. Every dedicated train hauling three or four rail casks would contain more Cesium-137 than the total amount released during the Chernobyl accident (2.4-2.9 million curies).

The shipping casks will not be tested to determine accident failure thresholds. The Nuclear Regulatory Commission (NRC) does not currently require full-scale physical testing of shipping casks. None of the SNF shipping casks currently used in the United States have ever been tested full-scale. NRC has developed a plan for demonstration testing of the new rail casks for DOE TAD canisters, but the tests are designed to promote public confidence, and will not actually determine crash failure thresholds, will not include a fire test, and will not include truck casks. DOE and the nuclear industry oppose mandatory full-scale impact and fire tests for new cask designs.

The consequences of a severe transportation accident could be much more severe than DOE estimates. In the Draft SEIS for Yucca Mountain, DOE chose not to evaluate “worst case” accidents, in which “all factors combine in the most disadvantageous way,” because such events are “not reasonably foreseeable.” (p.G-54) Moreover, the DOE accident analysis did not include consideration of human error in the design, fabrication, and loading of shipping casks. DOE also chose not to consider unique local conditions that could result in more severe accidents or consequences. DOE does acknowledge that cleanup costs following a transportation accident resulting in release of radioactive materials could range from $300,000 to $10 billion.

The consequences of a successful terrorist attack could be much more severe than DOE estimates. DOE acknowledges in the FEIS and the DSEIS that both truck and rail casks are vulnerable to terrorist attacks or sabotage involving certain types of military and commercial explosive devices. However, DOE has chosen not to consider attack scenarios including multiple weapons or combinations of weapons that could result in
radioactive releases, human health effects, and cleanup costs, that could be tens to hundreds of times greater than DOE estimates. Nevada-sponsored studies have concluded that a credible attack scenario in an urban area could release enough radioactive material to cause thousands of latent cancer fatalities and to require cleanup and recovery costs exceeding $10 billion.

DOE estimates 2,650 truck shipments through the Las Vegas metropolitan area, on I-15, I-215 (the Northern and Western Beltways), and US 95, under the proposed action. If there is no second repository, there would be 5,025 truck shipments. There would be 1-2 truck shipments per week, every week, for 50 years.

DOE estimates 755 rail-cask shipments (about 8% of the total), in about 252 trains, through Las Vegas on the Union Pacific mainline, under the proposed action. If there is no second repository, and the same percentage shipments enter NV from CA, there could be about 1,929 rail cask shipments in 647 trains through Las Vegas. The DOE estimate could result in 5-13 trains per year, for 50 years.

State of Nevada estimates up to 4,400 rail-cask shipments (45% of the total), in about 1,467 trains, through Las Vegas, under the proposed action. If there is no second repository, there could be 10,850 rail cask shipments in 3,617 trains, through Las Vegas. There could be 29-72 trains per year, or 2-6 trains per month, for 50 years.

DOE defines the radiological region of influence (ROI) for incident-free transport as the area 0.8 km (0.5 mi) on either side of the rail alignments centerline, and for accidents and sabotage the area 80 km (50 mi) on either side. The affected environment for radiological impacts includes individuals and businesses within the ROIs.

The State of Nevada has applied the radiological ROIs to the potential DOE shipping routes through Las Vegas and Clark County, based on a half-mile buffer around highways and the UPRR mainline, using the Clark County GIS Management Office “streetcenterline” file, and the Bureau of the Census 2005 census tract estimates.

State of Nevada estimates at least 113,000 residents of Clark County live within one-half mile of a highway route for truck shipments to Yucca Mountain.

State of Nevada estimates at least 95,000 residents of Clark County live within one-half mile of the Union Pacific route for shipments to Yucca Mountain via Caliente.

Based on previous studies, State of Nevada estimates at least 40,000 nonresident visitors and workers in Clark County would likely be located within one-half mile of the highway and rail routes for shipments to Yucca Mountain at any hour of the day.

State of Nevada estimates virtually all of Clark County’s 1.9 million residents live within the 50-mile radiological region of influence for transportation accidents and sabotage.

Documentation available at http://www.state.nv.us/nucwaste/trans.htm or phone: 775-687-3744
Clark County Region of Influence for Radiological Impacts: Incident-free Rail and Truck Shipments of Spent Nuclear Fuel and High-level Nuclear Waste to Yucca Mountain