

***The Yucca Mountain Dump Plan  
Would Launch Up to 453 Barges of  
Deadly High-Level Radioactive Waste  
Onto the Waters of Lake Michigan***

As part of its plan to transport high-level radioactive waste to Western Shoshone Indian land at Yucca Mountain, Nevada, the U.S. Department of Energy (DOE) proposes up to 453 barges carrying giant high-level radioactive waste containers onto the waters of Lake Michigan. See the second page of this fact sheet for a map of the proposed routes and a breakdown of shipment numbers by port.

Accidents happen. But what if high-level radioactive waste is involved? U.S. Nuclear Regulatory Commission (NRC) design criteria for atomic waste transport containers are woefully inadequate. Rather than full-scale physical safety testing, scale model tests and computer simulations are all that is required. The underwater immersion design criteria are meant to “test” (on paper, at least) the integrity of a slightly damaged container submerged under 3 feet of water for 8 hours. An undamaged cask is “tested” (on computers, at least) for a 1 hour submersion under 656 feet of water.

But if a cask were accidentally immersed under water, or sunk by terrorists, is it reasonable for NRC to assume that the cask would only be slightly damaged, or not damaged at all? Given that barge casks could weigh well over 100 tons (even up to 140 tons), how can NRC assume that they could be recovered from underwater within 1 hour, or even within 8 hours? Special cranes capable of lifting such heavy loads would have to be located, brought in, and set up. And what about the fact that Lake Michigan is deeper than 656 feet at locations not far from DOE’s proposed barge shipment routes?

The dangers of nuclear waste cask submersion underwater are two fold. First, radioactivity could leak from the cask into the water. Each container would hold 200 times the long lasting radioactivity released by the Hiroshima atomic bomb. Given high-level atomic waste’s deadliness, leakage of even a fraction of a cask’s contents could spell unprecedented catastrophe in the source of drinking water for tens of millions of people – Lake Michigan. Second, enough fissile uranium-235 and plutonium is present in high-level atomic waste that water, with its neutron moderating properties, could actually cause a nuclear chain reaction to take place within the cask. Such an inadvertent criticality event in Sept. 1999 at a nuclear fuel factory in Japan led to the deaths of two workers; many hundreds of nearby residents, including children, received radiation doses well above safety standards.

**STOP THE ACCIDENT BEFORE IT HAPPENS!**

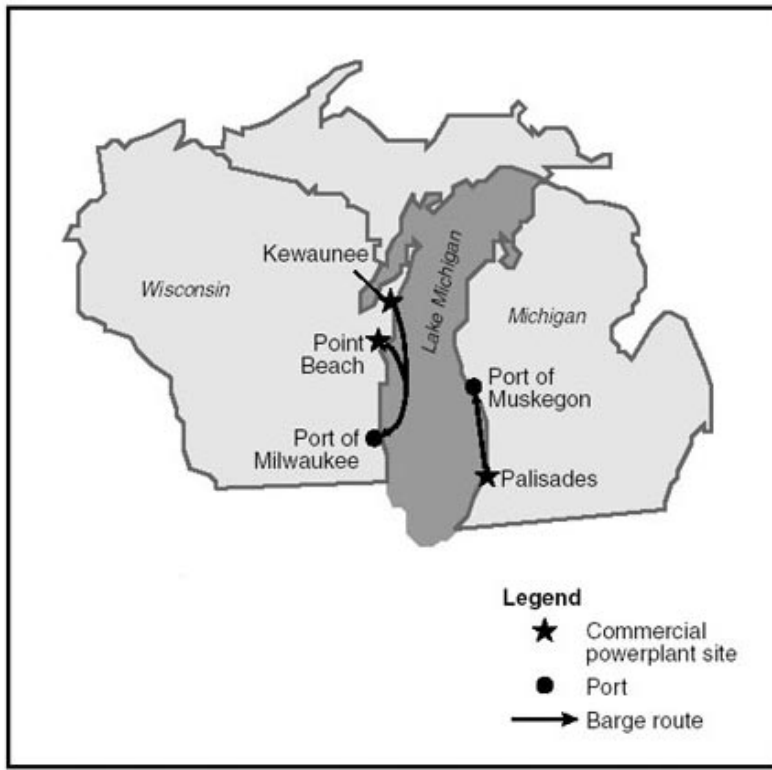
***Don’t let D.O.E. and N.R.C. get away with  
shipping high-level radioactive wastes on Lake Michigan!***

**Urge Your U.S. Senators and Representative to oppose  
the Yucca Mountain dump plan!**

**Call their offices via the U.S. Capitol Switchboard: 202.224.3121.**

**For more information, contact Nuclear Information & Resource Service, 202.328.0002,  
[nirsnet@nirs.org](mailto:nirsnet@nirs.org), [www.nirs.org](http://www.nirs.org)**

**Barge Shipments of High-Level Radioactive Waste on Lake Michigan  
Proposed by U.S. Dept. of Energy under its Yucca Mountain Plan**



Map taken from Figure J-9, Routes analyzed for barge transportation from sites to nearby railheads, page J-80.

<u>Nuclear Plant</u>	<u>Location</u>	<u>Number of Shipments Proposed</u>	<u>Barges offloaded at:</u>
Palisades	Covert, MI	Up to 125	Port of Muskegon, MI
Kewaunee	Carlton, WI	Up to 111	Port of Milwaukee, WI
Point Beach 1/Two Rivers, WI		Up to 215	Port of Milwaukee, WI
Point Beach 2/Two Rivers, WI		Up to 2	Port of Milwaukee, WI
<b>Totals</b>		<b>Up to 453</b>	

Table taken from Table J-27, Barge shipments and ports, page J-83.

Map and table taken from U.S. Department of Energy, “Final Environmental Impact Statement for Yucca Mountain,” Appendix J (“Transportation”), Feb. 2002.