



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
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The Mega Disasters episode “Glow Train” presents an alarmist and sensationalized view of the risk of a catastrophic accident during the transportation of spent nuclear fuel to the proposed Yucca Mountain nuclear waste repository.

The Nuclear Regulatory Commission certifies the designs of all casks used for transporting commercial spent nuclear fuel, and it will certify the casks to be used to transport waste to Yucca Mountain, if the repository is approved. NRC standards require that a cask be designed to survive a sequence of tests including a 30-foot drop onto an unyielding surface followed by a fully engulfing fire of 1,475 degrees Fahrenheit for 30 minutes. This is a very severe test sequence that encompasses more than 99% of vehicle accidents.

The show discusses rail accidents involving propane, chlorine and gasoline as analogies for a spent fuel rail accident. But those substances are transported in stainless steel tankers with walls about $\frac{3}{4}$ of an inch thick. The sides of spent nuclear fuel casks are typically more than 10 times as thick and are constructed of various robust materials such as lead, concrete and steel. Impact limiters on the ends of the casks are up to four feet thick. Comparing these is akin to equating a soda can to a lead pipe.

The NRC examined each of the accidents depicted in the show to determine if they held any implications for the safety of spent fuel transportation. A full-scale modeling of the Baltimore Tunnel Fire of 2001 determined that a spent fuel cask would not be breached. A study of the MacArthur Maze bridge fire and collapse of 2007 is underway; preliminary results indicate that a spent fuel cask would not be breached.

For More Information:

The NRC study of the Baltimore Tunnel Fire of 2001 is available online here:

<http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6886/>.

Video of physical crash and fire tests of spent fuel transportation casks:

http://www.ocrwm.doe.gov/info_library/newsroom/videos.shtml.