



THE NRC'S NUCLEAR WASTE CONFIDENCE GAME

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INTRODUCTION: “Illusion of a Solution” to the Radioactive Waste Dilemma

Between 1957 and 2013, around 70,000 metric tons (77,000 tons) of forever deadly commercial irradiated nuclear fuel (high-level radioactive waste, HLRW) has accumulated across the U.S., a problem with no solution in sight. Even though HLRW is one of the worst hazards humans have ever created, an Environmental Impact Statement (EIS) was never conducted by the U.S. Nuclear Regulatory Commission (NRC) to examine the risks. NRC has permitted the unlimited generation of HLRW at atomic reactors by hiding behind a policy labeled the “Nuclear Waste Confidence Decision” for decades. Recently, a coalition of states and environmental groups won a major legal victory, wherein the second highest court in the land ordered NRC to carry out a long overdue EIS.

From a Cupful of Radioactive Waste, to a Mountain 70 Years High

Enrico Fermi generated the world's first high-level radioactive waste when he created a self-sustaining nuclear chain reaction in Chicago Pile 1, the world's first prototype atomic reactor, on Dec. 2, 1942, as part of the U.S. military's Manhattan Project – the top-secret race to invent the atomic bombs dropped on Hiroshima and Nagasaki, Japan in 1945. More than seven decades later, we still do not know what to do with that first cupful of HLRW Fermi generated. It was initially buried in a park, Red Gate Woods, in the southwestern suburbs of Chicago, where it later leaked out over the decades, before partial transfer out West.

The mountain of radioactive waste grew larger, as military production reactors generated weapons-grade plutonium to fuel the Cold War nuclear arms race, which continued for nearly a half century. Until now, the plan has been to “co-mingle” these U.S. Department of Energy (DOE) jurisdiction military HLRWs at the same national dumpsite as commercial irradiated nuclear fuel.

The first commercial reactor began operations at Shippingport, PA in 1957, with more and more reactors joining the fleet in the 1960s and 1970s. Indoor wet pools were built to store the commercial HLRWs generated in a “low density configuration” on an “interim” basis. The assumption was, irradiated fuel would be hauled off in short order to reprocessing facilities, and the leftover HLRWs eventually buried in “deep geologic disposal.”

But dirty, dangerous, and expensive reprocessing was, thankfully, quickly abandoned by the mid-1970s. And, now 70 years into the Atomic Age, and 55 years into

commercial nuclear power, we still lack a deep geologic repository, with none in sight. The pools have filled and most now contain decades of accumulated waste, multiple atomic reactor cores-worth of ultra-hazardous irradiated nuclear fuel. However, unlike atomic reactors themselves, these pools are located outside of any robust radiological containment structures.

The Nuclear Waste Confidence Decision and Rule

In response to lawsuits brought by states, such as Minnesota, and environmental groups, such as Natural Resources Defense Council (NRDC), in the late 1970s and early 1980s, NRC was forced to begin addressing the risks of HLRW, which had already been accumulating for a quarter century. But rather than legitimately deal with the hazards, NRC instead played a paper game, publishing its Nuclear Waste Confidence Decision and Rule in 1984. The timing was appropriate enough: Orwell rolled in his grave, as the Nukespeak “Waste Confidence” amounted to a confidence game being played with high-level radioactive waste.

NRC merely declared “confidence” that one, or more, deep geologic repositories for permanent disposal of HLRW would open by 2007-2009, and that in the meantime, “interim” on-site storage at reactors would be safe. In this way, with the stroke of a pen, NRC blessed the unlimited generation of HLRW.

However, despite NRC’s “Confidence,” HLRW storage pools across the U.S. actually reached maximum physical capacity. The pools’ high-density configuration approaches operating reactor cores in density, requiring extraordinary measures to prevent high-risk, inadvertent nuclear criticalities in the storage pools.

In order to re-fuel reactors, space has had to be freed up in the packed-to-the-gills pools. The oldest, longest thermally-cooled and radioactively decayed wastes are thus transferred to on-site dry cask storage in outdoor, passively air-cooled concrete and/or steel silos or bunkers. Surry in VA was the first nuclear plant forced to install dry cask storage for its overflowing wastes, but by 2015, almost all U.S. atomic reactors will have so-called “Independent Spent Fuel Storage Installations.” However, instead of emptying most of the irradiated fuel to dry casks to restore the pools to the originally designed low density configuration, most nuclear plants have kept pools as full as possible. They do this to defer dry cask storage costs as far into the future as possible, regardless of the potentially catastrophic risk of a pool fire.

Nuclear Waste Confidence Steadily Erodes

Already by 1990, the agency had to backpedal, significantly revising its Nuclear Waste Confidence after just six short years. Now, NRC stated, only a single dumpsite could be counted on by 2025. In less than a decade, the coveted inaugural national repository had already retreated nearly two decades into the future. Despite this apparent loss of “Confidence,” over 100 atomic reactors across the U.S. were allowed to continue churning out 2,000 to 3,000 metric tons (2,200 to 3,300 tons) of HLRW each

year.

This backpedaling occurred despite the politically, not scientifically, driven decision in 1987, popularly known as the “Screw Nevada” bill. The U.S. Congress – over the objections of the State of Nevada – declared Yucca Mountain the sole site in the country to be further studied for a HLRW dump. This, despite U.S. Department of Energy (DOE) findings several years earlier, already indicating Yucca’s scientific unsuitability. The more DOE studied Yucca, the more geological, hydrological, seismic, and even volcanic “showstoppers” it discovered. Yucca should have been disqualified from any further consideration. But raw politics, and the power of the nuclear industry, drove the project forward. If health, safety, or environmental regulations got in the way, they were simply weakened, or entirely removed.

Despite DOE first breaching its contracts with nuclear utilities to begin “taking out the garbage” by 1998, NRC nonetheless stood by its 1990 version of “Nuclear Waste Confidence” in 1999, making no changes.

In 2000, President Clinton vetoed “Mobile Chernobyl” legislation that would have rushed HLRW to Yucca long before scientific suitability studies had been completed. In 2002, George W. Bush and his Energy Secretary Spencer Abraham gave their thumbs up to the Yucca dump, even though 300 key technical studies remained incomplete. Although Nevada officially vetoed the idea, Congress overrode it, and the Bush administration eagerly sought an NRC construction and operating license for the controversial, imposed dumpsite. However, the State of Nevada countered with hundreds of technical contentions, challenging approval of the dump at such a geologically unsuitable site. What the nuclear establishment in industry and government had assumed would be a “slam dunk” licensing proceeding bogged down, and ground to a halt.

Nuclear Waste Confidence in Full Retreat

In 2008, Democratic presidential candidates vied with each other to be the most opposed to the Yucca dump. Barack Obama won the Nevada caucus, the Democratic primary, and the presidential election. Upon assuming office, he and his Energy Secretary, Steven Chu, cast a clear “no confidence” vote on Yucca, declaring the proposed dump “unworkable.” The Obama administration zeroed out funding for the project, and moved to withdraw the construction and operation application from the NRC license proceeding.

Thus, by 2010, NRC was forced to overhaul its Nuclear Waste Confidence yet again. It now expressed “confidence” that a repository would open, someday, “when needed,” but refused to give a date certain. At the same time, it stood by its claim that HLRW would be “safely” stored at reactor sites for 120 years (60 years of operations, and 60 years after license termination). NRC even began looking at “establishing confidence” that HLRW could be “safely” stored on-site for 200 to 300 years, giving a whole new Atomic Age meaning to the word “temporary.”

Nuclear Waste Confidence Shattered

In 2011, a coalition of state Attorneys General (from CT, NJ, NY, and VT) and environmental groups launched a renewed challenge to NRC's Nuke Waste Con Game in the federal courts. The environmental groups included NRDC, represented by senior attorney Geoff Fettus; and the Blue Ridge Environmental Defense League, Riverkeeper, and Southern Alliance for Clean Energy, represented by attorneys Diane Curran of Washington, D.C. and Mindy Goldstein of Emory University's Turner Environmental Law Clinic. The environmental coalition was served by expert witnesses Dr. Arjun Makhijani of Institute for Energy and Environmental Research, Dr. Gordon Thompson of Institute for Resource and Security Studies, and attorney Phillip Musegaas of Riverkeeper. In June 2012, they won.

The federal Court of Appeals for the DC Circuit, the second highest court in the land, ruled in favor of the plaintiffs, nullifying NRC's 28-year old Nuclear Waste Confidence. The three judge panel found that NRC had violated the National Environmental Policy Act (NEPA). The Court ordered NRC to carry out a decades overdue EIS.

In response, the five NRC Commissioners ordered a two-year halt to finalization of any licensing proceedings – both proposed new reactor construction and operating license applications, as well as old reactor 20-year license extensions – until the EIS is completed. A growing environmental coalition, including Beyond Nuclear, objected that NRC's two-year EIS proceeding was a rush job from the get-go. Just a year earlier, NRC staff had stated that it needed seven years to do an adequate job.

The environmental coalition has already submitted comments on NRC's rushed environmental scoping, and is now gearing up for multiple public hearings around the country, to comment on NRC's Draft EIS, likely to be held in autumn 2013.

Most recently, a coalition of state attorneys general (from CT, MA, NY, and VT) formally petitioned against NRC's rushed EIS proceedings, even suggesting that current reactor operations should cease until NRC completes its Nuclear Waste Confidence EIS. The Attorneys General urged the NRC Commissioners to override NRC staff's recommendations by requiring consideration of "[t]he alternative of not allowing further production of spent fuel until the NRC determines that there is a safe and environmentally acceptable permanent waste repository to receive the additional spent fuel." This is, in fact, very similar to the decades old laws in seven states including CA, IL, KY, and WI, banning new reactor construction, until a solution to the radioactive waste problem has been established.

Conclusion: What to Do about HLRW? It's Time to STOP MAKING IT!

Dr. Judith Johnsrud of the Environmental Coalition on Nuclear Power, a 50+ year veteran of the anti-nuclear movement, has referred to radioactive waste as a "trans-solutional" problem, or one beyond humankind's ability to actually solve. Given that we are 70 years into the Atomic Age, and no permanent, safe location or technology has

yet been found to isolate even the first cupful of radioactive waste from the biosphere, it's high time to stop making it.

For what already exists, we face quite the dilemma. The least-worst interim measure, as agreed to by hundreds of environmental groups representing all 50 states, is Hardened On-Site Storage (HOSS). HOSS calls for emptying the vulnerable storage pools, and transferring HLRW into dry casks on-site that are designed and built well, to last not for decades, but for centuries without leaking; that are fortified against attacks; and that are safeguarded against accidents.

As the Alliance for Nuclear Accountability and other environmental coalitions have long held, HLRWs should be stored as safely as possible, as close to the point of generation as possible. Where possible, HLRWs should be stored in monitored, retrievable HOSS.

HOSS buys us some years or decades, without rushing into senseless HLRW shipping risks on the roads, rails, and waterways. Current proposals to transfer HLRWs to "centralized" or "consolidated interim storage" represents a thinly veiled radioactive waste shell game, which could even lead to a relapse into reprocessing.

For more information about HLRW, please see <http://www.beyondnuclear.org/radioactive-waste/>. Written by Kevin Kamps, Beyond Nuclear, 6/19/13. Contact Kevin at (301) 270-2209x1, or kevin@beyondnuclear.org.