

## The Question of reprocessing nuclear waste at Yucca Mountain

Some people have suggested that Yucca Mountain should be used as an interim storage site for reprocessing the nation's spent nuclear fuel and high level waste.

It is currently against federal law (Nuclear Waste Policy Act) for Nevada to be an interim storage site while still designated in the Act for a permanent repository. Our nation tried, and made quite a mess of reprocessing at Hanford, Savannah River and West Valley, New York. Reprocessing creates a bi-product of weapons ready plutonium and changes the solid waste into a much nastier liquid waste stream. Currently the Department of Energy estimates the cost of cleaning up the reprocessed leftovers in Hanford, Washington to be \$260 Billion Dollars. Savannah River is still cleaning up from reprocessing and the site in West Valley cost the nation billions to reclaim.

France and England reprocess and in doing so they pump millions of gallons of liquid radioactive waste annually into the sea as part of that process. They are being sued by Ireland over the radioactive discharge. They also store weapons-grade plutonium on site with anti-aircraft batteries next to the plant in Normandy. The process is heavily subsidized by their governments and produces fuel that is 6 times more expensive than new fuel.

At a 2009 U.S. Nuclear Waste Technical Review Board meeting in Maryland the topic was "Closing the Nuclear Fuel Cycle." The top 3 reprocessing firms in the world; AREVA, Energy Solutions and GE-Hitachi were invited to explain what they could do in the U.S. After their presentations one thing was clear, no one has the technology to close the fuel cycle and eliminate the waste.

All 3 companies said they think they can reduce the Volume of high level waste by a factor of 4. But the OVERALL volume of waste actually increases by 4 to 6 times. Less high level waste which is now in a liquid form, but literally tons more mixed waste, transuranic waste and low level waste. Unlike in Europe, we do not allow pumping the liquid waste into the ocean. Those firms also will have problems meeting EPA standards for Krypton gas, Iodine 129 and Tritium.

The process is highly water intensive and would require a nuclear power plant. The Yucca Mtn. area does not have any unallocated groundwater left, especially the 35,000 to 50,000 acre feet of water needed for a large reactor for reprocessing. The Nevada State Engineer reports that the five water basins around Yucca Mountain are already over-appropriated. In addition, the chances of licensing a nuclear plant in a very high earthquake zone are slim. And, All 3 firms said they'd still need a permanent deep geologic repository for high level waste even if they were to reprocess.

The firms said they would need ratepayers or taxpayers to pay for the multi-billion dollars required to reprocess unless they use the money in the nuclear waste fund to pay for the costs of reprocessing. (Of course, if they use the money for reprocessing there won't be any for a \$96 Billion dollar repository somewhere.)

No one offered a financial model that is acceptable to the U.S. financial markets, let alone their own boards. The US nuclear industry stated it is "against paying one more dime for reprocessed fuel," that is 6 times more expensive than new uranium fuel which is cheap and plentiful.

As for the billions of dollars that might flow into the State? No one has offered Nevada anything in the last 27 years. There is no money outside of what's in the 1987 Nuclear Waste Policy Act. Nevada could sign an agreement to accept \$10 Million for "mitigation" until the waste is in the mountain, and \$20 Million a year thereafter if we were willing to give up our independent oversight role and legal rights established by the Act. No general fund dollars. No national laboratory. No improvement to our transportation infrastructure.

In summary, reprocessing would eat up vast quantities of water, require the licensing and construction of a large nuclear reactor, still require a full size repository, and is not being promoted by its own industry because of the costs.

Scientists predict that they will come up with new and much better techniques to re-use spent nuclear fuel and nuclear waste in the next 20 to 40 years. The President's Blue Ribbon Commission on the Nations Nuclear Future will be looking at new technology and making a recommendation in 18 months about what to do with the country's stockpile of used fuel and waste. They may indeed look at reprocessing in the future, but certainly at an area with a plentiful water supply and suitable land to site a futuristic nuclear reactor. That site is not Yucca Mountain.