

Rulemaking1CEm Resource

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TITLE: Waste Confidence—Continued Storage of Spent Nuclear Fuel

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From: Brian O'Malley, MD [mailto:ptown.doc@verizon.net]
Sent: Thursday, December 05, 2013 5:42 PM
To: RulemakingComments Resource
Subject: Pilgrim Nuclear Power Station

To: Rulemakings and Adjudications Staff
Re: Docket ID NRC-2012-0246

Comments on NRC Waste Confidence

I write as a Primary Care Internal Medicine physician, caring for the outer Cape Cod community for over 35 years. My office is less than 21 miles downwind of the Pilgrim Nuclear Power Station in Plymouth, MA. I have committed my working life to preventive care of my patients and my community. And I believe this aging and antiquated plant poses a risk that could cost us our health, our homes and our lives.

Many are the hazards of nuclear power. Among the most intractable difficulties to resolve is the long-term **storage of spent fuel rods.**

In seventy years of producing nuclear weapons and nuclear energy we have found no way to dispose of the resultant radioactive waste that will not threaten life on earth.

There is no permanent waste repository. The Yucca Mountain team consisted of the best people we have with unlimited resources, yet they failed. They didn't fail due to incompetent management, they failed because they were given an impossible task.

Were there to be a repository available, the transportation of waste to it would be vulnerable to accidents and to terrorism. One only has to cite the many truck, train and ocean vessel accidents associated with the transportation of chemicals and fossil fuels to

understand comparable risks.

Failing a national repository, the NRC has not studied the issue of waste storage for each individual reactor (age, type, site location, ownership, history of problems, accidents, violations) but instead has created a generic wish list for waste storage, lacking workable specifics. Each reactor must be considered on its own.

In the case of Entergy's Pilgrim Nuclear Power Station (PNPS) in Plymouth, which is of special concern to us, the undersigned, shutdowns and malfunctions have been so numerous that the NRC itself has flagged the plant for intensive oversight.

Presently on-site storage in dry casks is the only solution, but it is only a relatively short-term fix for a problem requiring containment for hundreds of thousands of years. So far the design for the Interim Spent Fuel Storage Installation (ISFSI) is underfunded, and its location is vulnerable to sea level rise, flooding and terrorism. The casks would not be separated by protective berms although that would obviously lessen the impact of an aircraft attack.

Although it never agreed to do so, Massachusetts is forced to host a high-level nuclear waste dump for up to 380 years - if the industry's and regulator's promises are kept. But past promises (40 years of reactor operations and no waste dump) were not kept. Given this history, NRC confidence in a waste plan does not give us any confidence.

With climate change, the likelihood of extreme weather events is increasing along with the potential for catastrophic results affecting any waste storage facility, especially those near the coast. We are concerned that seismic risks have been underestimated just as the NRC has historically underestimated flooding and seismic risks.

The NRC has estimated the risk of a core melt with containment breach at a GE Mark 1 Boiling Water Reactor such as Pilgrim at 1 in 1 million reactor-years. Actual reality has proven the risk to be 1 in 352 reactor-years, 2,841 times more likely than NRC prediction.

At Pilgrim, nearly 3300 bundles of irradiated fuel are stored in an attic pool designed for 880. The NRC's probabilistic risk assessment (PRA) assures us that a high level radwaste pool can't be drained by an aircraft carrying C4. The PNPS in Plymouth is a Mark 1 reactor that's on a flight path for a major airport - and there are no airspace restrictions. Even a partial drain down is likely to result in an inextinguishable uranium and plutonium fire. The only thing between a 747 and the SFP is a thin sheet metal roof. It's not safe now, and claiming that it will remain safe until 2092 is only wishful thinking.

Could people be evacuated safely if there's a fire at a waste fuel pool? Past experience with comparatively minor accidents like Windscale, Three Mile Island, Chernobyl and Fukushima says no. But in order to maximize the externalization of radwaste costs, within just a couple of years of final reactor shutdown the NRC will not require evacuation planning. This is altogether unacceptable.

There is nothing scientific about NRC claims that it can guarantee the safe storage of nuclear waste for a million years. This waste contains plutonium & uranium with half-lives of 24,000 years and ten billion years, respectively. You needn't have any expertise, just a little commonsense to realize how insane this is. One million years takes us to the Calabrian stage of the Pleistocene era, a period of which we know very little, hundreds of thousands of years prior to the emergence of the Neanderthal. But going forward in time, we know little if anything about events a decade from now, and we have no way to know anything about conditions ten thousand centuries from now. That the word 'confidence' is used by the NRC when talking about safeguarding radwaste for a period of time five hundred times greater than the Christian era is preposterous!

There is no proven technology to displace something for a million years. Not for 100,000 years, not even for 10,000 years. The longest lived man-made structures are the pyramids. They've been around for 5,000 years and they failed at their intended purpose.

Entropy isn't addressed by the NRC waste document. The NRC concludes in Section 4.1.3 that the impact of indefinite storage on land use will be small. How does that jive with real world engineering experience? Real world data says that every 25 years we will have a major leak of high-level nuclear waste that will render about 250 square kilometers unusable for millennia. That works out to be 5 million square kilometers or about one-thirtieth of the land area of the entire world.

Petitioners and intervenors have called attention to what is wrong with the NRC Draft Waste Confidence Generic Environmental Impact Statement (DWC GEIS) and backed up their criticism with numerous examples of failing to comply with federal laws, faulty decision-making practices, and poor operating histories. But many of these concerns and facts have been ignored.

The NRC fails to abide by the intent, language, and provisions of the Atomic Energy Act (AEA) and the National Environmental Policy Act (NEPA).

We endorse Principles for Safeguarding Nuclear Waste at Reactors from the Institute for Energy and Environmental Research.

We agree with those who ask the NRC to stop building new nuclear facilities, stop extending the licenses of existing nuclear power plants, to not expose the nuclear workers and the public by transporting nuclear waste.

In concluding, one elephant in the room stands: the NRC's failure to understand the very real, and well documented science, of radioactive substances in this waste. A fingernail of plutonium could kill off, conservatively a large city. Cesium, strontium, and other radionuclides contained in waste, are some of the most toxic substances on earth, creating cancer and genetic injuries.

The NRC has a duty to protect children and grandchildren for generations to come from

substances which contaminate human beings, the biosphere and the environment and which can create lasting, adverse, multi-generational changes in the genome. We believe the DWC GEIS shows that the NRC does not take that duty seriously.

Rather than generating more waste, we believe that the prudent approach- when there is no solution to the storage problem- is to stop producing nuclear waste.

Sincerely yours,

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