
By Pine duBois and Karen Vale

Print Page

November 13, 2015 2:00PM

OF NUCLEAR INTEREST: Pilgrim Nuclear: We're going to need a bigger boat

Entergy submitted Pilgrim Station's flood risk assessment in March of this year, and concerns immediately surfaced about the exclusion and inaccurate assessment of certain flood-causing mechanisms.

Entergy's Pilgrim Nuclear Power Station is located on the shore of Cape Cod Bay in Plymouth, close to sea level. The coastal zone in which Pilgrim sits is subject to many hazards, specifically those associated with sea level rise, flooding, storm surge and nor'easters. To address these types of risks, the Nuclear Regulatory Commission required all U.S. nuclear facilities, including Pilgrim, to develop flood risk assessments.

Entergy submitted Pilgrim's flood risk assessment in March of this year, and concerns immediately surfaced about the exclusion and inaccurate assessment of certain flood-causing mechanisms. Why is this so concerning to us? Having a detailed and robust flood assessment provides the basis for good planning and management to help curb flooding risks and ultimately protect public safety, environmental health, and the economic well-being of the area. This is especially true for areas like Pilgrim containing hazardous materials. While a catastrophic accident for any reason is certainly possible, it is the ongoing leaks and accidental releases of contaminants, including radionuclides, into the environment and Cape Cod Bay that is of daily concern.

As climate change takes hold and sea levels increase, so do groundwater elevations. All contamination present on the Pilgrim site will, no doubt, continue to migrate toward Cape Cod Bay. This will be true even after Pilgrim stops generating power. Of considerable alarm is Pilgrim's nuclear waste that will likely be stored on-site well after shutdown. The so-called "stranded" low-level waste and the new spent nuclear fuel casks are so close to the shoreline that all are within reach of rising tides, coastal storms, and salt water degradation.

Due to these concerns, Jones River Watershed Association recently commissioned Coastal Risk Consulting (CRC) to analyze the methodologies and conclusions presented in Pilgrim's flood assessment report. According to the CRC report, current and future flood risk at Pilgrim is severely underestimated. Here is a sample of the findings:

"Local intense precipitation" is found in Pilgrim's flood risk assessment as a primary hazard of concern that could inundate the site with several feet of rainwater. Despite this, the CRC report found that this mechanism is underestimated in Pilgrim's report since it uses outdated precipitation data and does not consider future climatic conditions that are projected to increase precipitation amounts during heavy rainfall events. (Think of the recent events in South Carolina.)

While the storm surge analysis in Pilgrim's flood assessment was robust, sea level rise over the next 50 years is understated since it relies heavily on historic sea level rise rates – producing a sea level rise more than 2.5 feet lower than reality.

Groundwater, subsidence, and erosion are not considered in Pilgrim's flood assessment, further underestimating risks (especially related to extreme storm events).

Pilgrim's flood assessment focuses solely on past risk conditions and does not include scenarios that address updated projections for future risk, specifically with regard to climate change. The CRC report shows that the Pilgrim site will be inundated with non-storm tidal flooding by mid-century and that a surge from a category 4 hurricane could already flood the site today.

Now Pilgrim is moving toward decommissioning. It is more important than ever to understand how these coastal hazards will impact the site now and in the years after shutdown. Entergy, regulators and town officials need to plan for this new era of climate-related risks. Considering the coastal impacts discussed, long-term "SAFSTOR" and delay in decontamination could lead to increasing and ongoing pollution of Cape Cod Bay. To help avoid this, Entergy must immediately carry out a site-wide survey for pollutants and develop a public plan for decontamination, and then fully and promptly clean up the site.

As for storage of nuclear waste, the best option of course is for all of Pilgrim's waste to be removed completely from the site. This is unlikely to happen. Current NRC rules allow for hundreds of years of storage on the site. We need to ensure that Pilgrim's nuclear waste is moved to areas at higher elevations, farther away from Cape Cod Bay and securely protected from natural and man-made hazards.

Pine duBois is executive director of Jones River Watershed Association, which has its offices on the banks of the river in Kingston, eight miles from Pilgrim. Karen Vale is campaign manager of JRWA's Cape Cod Bay Watch Program.