

By Janet Azarovitz

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June 16, 2016 6:00AM

OF NUCLEAR INTEREST: Pilgrim's nuclear waste dilemma

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Entergy's Pilgrim Nuclear Power Station is a decrepit facility based on 1950s design. The design was acknowledged to be substandard by the time Pilgrim went online in December 1972. Its main design flaw is in the containment vessel, which is known to be incapable of "containing" the radiation if an accident in the reactor were to occur. The design also led to the construction of the "spent fuel pool" within the reactor building to store "spent" fuel rods, which are made of uranium and packaged in assemblies.

For the past 44 years and until Pilgrim shuts down in 2019, every 18 months one-third of Pilgrim's fuel rods in the reactor core become spent. This means that they become too hot to control in the reactor and must be replaced. These spent rods must be kept in 40 feet of water in the spent fuel pool to shield radiation and be constantly cooled to prevent a fire that would release huge amounts of radioactivity.

Although Pilgrim's spent fuel pool was originally designed to hold 880 assemblies, it now holds more than 3,000. Since there is no offsite national repository planned (i.e., Yucca Mountain was not approved), Pilgrim's spent fuel pool is seriously over-crowded. There are currently discussions about centralized siting of nuclear waste by the U.S. Department of Energy, however it will be a long time before these discussions help those of us living in the shadow of Pilgrim. Even after Pilgrim shuts down in 2019, the pool will contain highly unstable radioactive fuel for many years.

America's Hometown will be a hazardous waste dump for this nuclear fuel for many years to come. When the pool is finally emptied, the spent nuclear fuel will still be stored onsite. Entergy, the present owner of Pilgrim, has designed and constructed an "Independent Spent Fuel Storage Installation" (ISFSI) for the storage of spent fuel in "dry casks." Three casks have been filled so far and approximately 100 casks will be needed to hold all of Pilgrim's nuclear waste.

These dry casks are supposed to last 100 years, but we know that some don't. Generally, scientists agree that dry cask storage is a safer system than wet pool storage, because electricity and pumping water are not required for cooling casks. Nor do casks require the critical, yet high-maintenance, boron panels that the densely packed pools need to prevent a nuclear reaction from occurring. For decades these panels have been known to deteriorate. A recent incident of "boron slippage" was reported last month at Pilgrim.

Unfortunately, no one, not the town of Plymouth, nor the U.S. Nuclear Regulatory Commission (NRC) reviewed the location of Entergy's ISFSI. The facility is about 120 feet from Cape Cod Bay and only a few short feet higher than the outdated flood zone. There is currently a citizen lawsuit challenging the town of Plymouth Zoning Board of Appeals' decision that allowed the construction of the ISFSI without review. The trial will occur this August, and if successful residents will have another opportunity to get real answers.

It is critically important that the problem of Pilgrim's nuclear waste storage is addressed and its spent fuel is moved to dry casks as quickly as possible, and sited in a safe location away from flooding and extremists. It is essential that regulatory agencies deal with where this dangerous material will go and how it will get there, since leaving it by the ocean when the sea level is rising and storms are getting worse is clearly a recipe for disaster.

Janet Azarovitz is a Falmouth resident and a member of Cape Downwinders Cooperative, which works to protect the welfare of residents of the Cape and the Islands from nuclear-related risks. She is also a representative of the Pilgrim Legislative Advisory Coalition, which seeks to achieve passage of nuclear-related legislation. Cape Downwinders Cooperative works collaboratively with Cape Cod Bay Watch.

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