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 Cape Cod Bay Watch

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OF NUCLEAR INTEREST: Energy efficiency and Pilgrim Nuclear

The inefficiency of Entergy's Pilgrim Nuclear Power Station is overlooked when it comes to figuring out how we can use our resources in a more economically and environmentally sound manner.

Energy efficiency is on everyone's mind these days. State and federal government programs incentivize homeowners and businesses to become more energy efficient. Yet, the inefficiency of Entergy's Pilgrim Nuclear Power Station is overlooked when it comes to figuring out how we can use our resources in a more economically and environmentally sound manner.

An investigation into Pilgrim's efficiency uncovered that about two-thirds (66 percent) of the heat energy produced is dumped into Cape Cod Bay as waste heat.

Pilgrim generates electricity by boiling water using nuclear fission, which creates steam. The steam runs turbines that make electricity. The cooling water Pilgrim needs for condensing the steam back into water comes from Cape Cod Bay: up to 510 million gallons every day. The water from Cape Cod Bay absorbs excess heat during the process of making electricity, and is pumped back into the Bay about 30 degrees Fahrenheit hotter.

Only about one-third (34 percent) of the heat energy produced at Pilgrim is converted into electricity for consumers. At this rate, Pilgrim is about as efficient as a typical coal fired power plant.

Entergy's wasteful operations are sanctioned under an outdated Clean Water Act permit issued by U.S. Environmental Protection Agency (EPA) and the state. EPA and the state allow Entergy to use an inefficient, outdated "once-through" cooling water system to withdraw cooling water from Cape Cod Bay, instead of requiring a more efficient, updated closed-loop system. Pilgrim has been using this outdated cooling water system since it started operating in 1972. The hot water – or wasted energy – that Entergy dumps into Cape Cod Bay harms marine resources and pollutes our ocean.

Entergy's use of Cape Cod Bay for cooling water is supposed to be tightly regulated by EPA and the state, to make sure Pilgrim uses the best technologies available that reduce environmental harm. However, since 1972, EPA and the state have not required any updates to Pilgrim's cooling technology, and have let Entergy's Clean Water Act permit expire in 1996 – almost two decades ago.

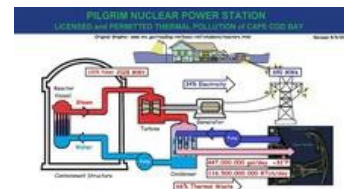
To put Pilgrim's inefficiency and wastefulness into perspective, here is a comparison. The amount of heat energy Entergy dumps into the Bay each year – about 42 trillion BTUs – is enough to heat 437,800 homes every year with fuel oil. That's more than four times the number of households on the Cape and Islands, and more than two times the number of households in Plymouth County.

The volume of water Entergy dumps into the Bay each year is more than enough to run a shower in every household on the Cape and Islands every day, all day, all year long. It is also 100 times more than the town of Plymouth's Water Department pumps to meet the entire town's municipal and domestic water requirements each year.

Entergy's inefficient and wasteful operation of Pilgrim is inconsistent with our state's reputation as a leader in energy policy and innovation. It is time for state agencies and EPA to recognize that Pilgrim makes no sense from an energy or environmental policy perspective.

More information is available at capecodbaywatch.org/efficiency.

The authors are volunteers with Cape Cod Bay Watch and other groups advocating for a safer and less environmentally destructive Pilgrim Nuclear.



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