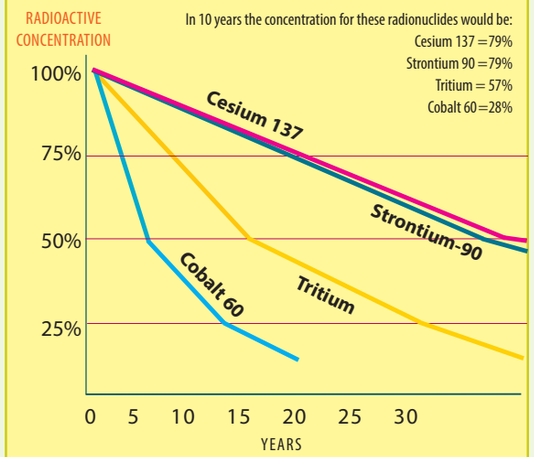
RADIONUCLIDES TO CLEAN UP AND THEIR NATURAL RATE OF DECAY



Radionuclides naturally decay over time, ultimately decreasing workers' exposure, clean-up costs, and contamination of waste communities.

• RETAINING THE SKILLED WORKFORCE:

After the fuel has been removed from the pool, shuttering the reactor can take many years to accomplish. The already skilled workforce is essential in decommissioning activities. They maintain the institutional memory important for proper cleanup. Workers, retained for site-surveying and dismantling uncontaminated buildings, could also begin other decontamination activities.

• COMPONENT REMOVAL:

Upon completion of fuel transfer from the spent fuel pool to dry cask storage, Pilgrim could begin a slow dismantlement and cleanup of reactor components and other internals. Delaying dismantlement of the internals can result in a number of benefits. Since the major radioactive elements found in cleanup are Tritium, Cobalt-60, Strontium 90 and Cesium-137, delaying removal by 10 years or so would substantially decrease reactor radioactivity while simultaneously allowing progress to begin for preliminary cleanup. Letting these radioactive elements break down naturally would considerably decrease worker exposure to the highly radioactive components as well as the amount of waste (in terms of curies) requiring removal to a waste dump. This would reduce decommissioning costs and benefit the waste dump communities with lower contamination of their land.

At Yankee Rowe Nuclear Power Station, with rapid dismantlement, 140,000 curies of reactor internals were shipped to Barnwell, South Carolina for burial. A more methodical transition would have ensured a safer outcome with less impact on a waste community.

• RESTRICTED USE OF THE SITE:

It is likely the reactor site's use will be restricted not only because of the radiation contamination but possible chemical contamination as well. The Yankee Rowe Nuclear site can never be released for unrestricted use because of PCB contamination.

• MONITORING HIGH LEVEL WASTE:

Storage of high-level waste is a national issue that may take decades to resolve. Therefore interim monitoring of dry cask storage is essential. A citizen oversight panel currently informs the public about decommissioning and the disposition of nuclear waste at Vermont Yankee. Citizens cannot afford to have the citizen panel controlled by Entergy.

It's been done before and it worked!

Rancho Seco, a California nuclear reactor, also without an adequate decommissioning fund, was closed in 1989. Management then engaged in a slow and thorough decommissioning that retained as many skilled workers as possible. The 913 MW reactor (50% larger than Pilgrim) was replaced by a mixture of small hydro, gas, solar, wind, conservation and efficiency! Rancho Seco's owners did the right thing by choosing a modified decommissioning plan that employed as many of its workers as possible. They also began an efficiency and conservation program that became a model for other energy corporations throughout the country.

Rancho Seco Reactor, now generating electricity from the sun.

Furthermore, even Entergy's own consultants described Rancho Seco's methodical decommissioning as the most cost-effective approach, rather than depleting funds for maintenance of the facility before beginning the cleanup in twenty years.

Decommissioning The Pilgrim Nuclear Station safely involves a balance of complex issues:

- Safe disposal of radioactive components
- Storing spent fuel on-site
- Retaining skilled workers
- Monitoring the site
- Adequate funds to accomplish the task

Anything less is clearly unreasonable and irresponsible.

For More Information:

CITIZENS AWARENESS NETWORK
www.nukebusters.org
413-339-5781

MA/BOSTON DOWNWINDERS
www.madownwinders.org
617-969-2150

CAPE DOWNWINDERS
www.capedownwinders.info
508-432-1744

ON BEHALF OF PLANET EARTH
Facebook **617-744-6020**

CAPE COD BAY WATCH
www.capecodbaywatch.org

Implosion of Trojan Nuclear Reactor, Washington State, 2006.

CLEAN UP PILGRIM NUCLEAR

SAFELY & COMPLETELY

WHO PAYS TO CLEAN IT UP?

In October, 2015, Entergy Pilgrim announced the closure of Pilgrim Nuclear Power Station, with an expected loss of over $120 million in the next 3 years. Decommissioning will begin in 2019 or sooner, yet **the financial picture for a thorough and responsible cleanup of this highly contaminated site is not so simple.**

Until 1999, Pilgrim was owned and operated by the utility Boston Edison, who then sold it to Entergy Corp., an energy company which owns nuclear and coal plants, as well as transmission lines, primarily in the south. Since Pilgrim began in 1972, ratepayers had been required to pay into a decommissioning fund to assure adequate site cleanup. When Entergy bought Pilgrim it operated then as a "merchant plant" and sold its power on the open market, with no more ratepayer contributions. As a limited liability corporation, Pilgrim is legally separated from its parent Entergy.

The NRC has permitted nuclear corporations to substantially underfund their decommissioning funds. With insufficient money in the fund, Entergy intends to delay decommissioning for many years and, because of its financial shortfalls, it intends to use cleanup funds to cover its operating expenses.

Pilgrim intends to seek permission from the NRC to raid the fund to pay for the transfer and guarding of high level waste (HLW) from fuel pool to dry cask storage. NRC's regulations clearly stipulate that decommissioning funds can only be used for radiological cleanup; there are separate regulations to deal with the handling of high level waste.

Pilgrim instead intends to use the fund to pay its taxes, lobbying, and legal fees as another Entergy LLC is doing at Vermont Yankee.

When Entergy Corp. bought Pilgrim in 1999, it committed to cover any financial shortfalls.

So why isn't it?

The NRC is protecting Entergy Corp.'s bottom line and permitting Entergy's LLCs to cover their shortfalls by raiding ratepayer monies in decommissioning funds.

The end of nuclear power is beginning in New England. However, **our work is not done.**

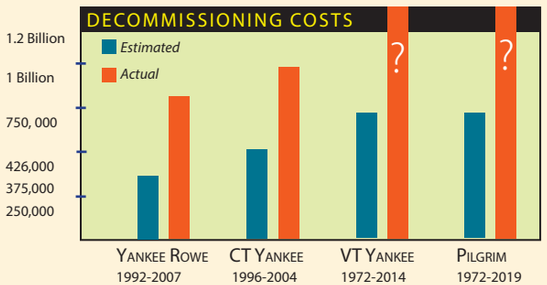
Bottom line, not public safety.

- Entergy has put zero dollars in the decommissioning fund since it bought the reactor in 1999 for $80 million dollars ($60 million of which was for fuel) and now claims there's not enough money to clean up the site.
- It intends to mothball the reactor until 2079 rather than engaging in a thorough and responsible cleanup process to benefit its workers, the community and the State.
- Entergy may not exist in 60 years; who will be responsible for the site cleanup and guarding of a high-level nuclear waste dump on Cape Cod Bay?
- Entergy intends to transfer its high-level nuclear waste into dry cask storage, using ratepayer money from the decommissioning fund. This will substantially undermine the fund and delay cleanup. It also intends to use the fund to guard the HLW which will again delay cleanup of the site.
- Entergy intends to end its Emergency Planning Zone (EPZ) after closure and before it transfers its HLW to dry cask storage. NRC inspectors have acknowledged that fuel transfer is a "risky business" requiring substantial oversight.

Waiting 15-20 years for site cleanup cuts costs and lowers worker exposure, a 60-year mothball only protects a bad corporation from its financial responsiblity. Entergy can't be trusted. Its systemic mismanagement, NRC Watch list status, and financial vulnerability makes delaying cleanup dangerous.

Pilgrim is closing. What's to be done?

Decommissioning involves taking apart the entire reactor and all its components, which must be safely transported and then buried. In the case of Pilgrim Nuclear, Entergy decided to delay decommissioning. The NRC 's own regulations permit the corporation to control the process.

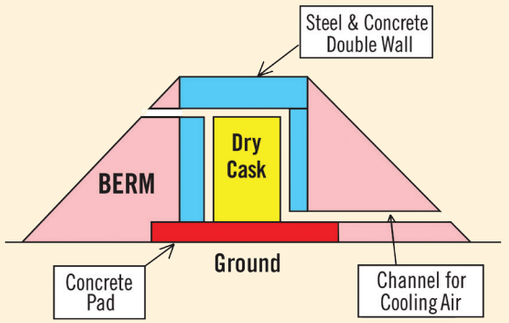


Decommissioning Costs:

The history of decommissioning is littered with groundwater contamination and escalating costs. Entergy itself has a checkered history of radioactive leaks, systemic mismanagement, delayed maintenance and NRC Watch List. It raises concerns for the contamination of Cape Cod Bay. It is essential that Entergy is held accountable for site cleanup including groundwater contamination.

History shows that projected costs of decommissioning and greenfielding are grossly underestimated. As a result, CT Yankee and Yankee Rowe ratepayers continued to pay the real cost of decommissioning years after those reactors closed. Massachusetts must require a fully funded greenfielding fund to ensure thorough cleanup of the site. With escalating costs and limited funds, Entergy is unlikely to have the resources needed for further cleanup. Clearly, it needs to have enough money now or Massachusetts ratepayers or taxpayers could be left paying the bill.

Existing dry-cask storage at Vermont Yankee



Proposal for a more secure hardened on-site dry cask storage

- **ENSURING SPENT FUEL SAFETY:**

Decommissioning also involves removing spent fuel from the pool and placing it into onsite dry cask storage, a process that can take two to three years. In a post 9/11 world, the security of the high level waste is critical. Pilgrim Nuclear's fuel pool design is acknowledged by the National Academy of Sciences as being the most vulnerable to terrorist attack due to the location of its fuel pool 7 stories above ground, outside of containment, under a thin metal roof. **With over 35 million curies of high-level waste in the pool, it cannot be permitted to sit as a vulnerable target.** Entergy intends to move the HLW, but it wants to use ratepayer money to do it. As essential as requiring a greenfielding account, the State must demand adequate funds to remove the spent fuel from the fuel pool upon closure.

- **HARDENING WASTE ON SITE:**

Given that the high-level waste (spent fuel) will remain on-site for decades, if not centuries, dry cask storage requires hardening to limit its vulnerability to terrorism. Because the site is 1,600 acres, robust double-walled casks , as well as ample "berming," could provide increased protection and deflect radiation escaping from the casks.