

Testimony from Cape Downwinders and Massachusetts Downwinders, organizations working on behalf of concerned citizens throughout Massachusetts, on protecting the economic interests related to nuclear waste storage in Plymouth and the decommissioning fund for the Pilgrim Nuclear Power Station

Cape Downwinders and MA Downwinders **support S. 1797**, an Act establishing a fee on the storage of spent nuclear fuel in reactor pools, and **S. 1798**, an Act establishing funding to provide moneys for post-closure activities at nuclear power stations. We contend these two Acts are necessary in order to protect the Commonwealth's economic interests.

S.1797 and **S.1798** will protect the economic interests of the citizens of Massachusetts from the impact of Entergy Corporation's operation of the Pilgrim Nuclear Power Station in Plymouth. Entergy is a Limited Liability Corporation with the risk of not fulfilling their obligations for decommissioning and post-closure activities. The spent fuel storage fee provides incentive for Entergy to decrease the risks associated with current wet pool storage to taxpayers, businesses, and property owners.

We ask your full support for S.1797 and S.1798 and request the Committee immediately release the bills as emergency measures with a favorable recommendation.

S. 1797 will protect the economic interests of the state by providing an incentive for Entergy to reduce the documented risk of radiological accident consequences by placing a fee on spent fuel in pools to facilitate removal of that waste from the wet pool to storage in dry casks. This Act also provides local communities with resources for emergency planning and financial supports to cover costs related to mitigate economic impacts given the risks associated with the storage of roughly a thousand tons of high level nuclear waste in the town of Plymouth and the costs for surrounding communities for emergency planning.

As evidenced by the 1979 Three Mile Island accident in PA, the expenses of evacuation, relocation, lost wages, and decline in property values are real life economic lessons as well as the larger economic impact from nuclear accidents such as Fukushima and Chernobyl.

The economic consequences from a radiological accident at Pilgrim would be devastating and forever change the landscape of Massachusetts.

Following the 2011 Fukushima accident in Japan, Physicians for Social Responsibility, an advocacy group addressing dangers that threaten our community, released a report which identified the economic damage experienced by the Fukushima Prefecture region and its residents:

- Cities, towns, agriculture, businesses, and property within 310 square miles were abandoned.
- All land within 12 square miles and 80 square miles northwest of Fukushima were declared too radioactive for human habitation and became permanent exclusion zones.
- 160,000 people were evacuated, losing their homes and possessions.
- The total economic loss ranges from \$250-500 billion.
- People had to continue to pay mortgages on homes they no longer lived in.¹

¹ <http://www.psr.org/environment-and-health/environmental-health-policy/responses/costs-and-consequences-of-fukushima.html?referrer=https://www.google.com/>

The International Atomic Energy Commission identified the socio-economic impact on the population from the 1986 nuclear accident at Chernobyl in countries sustaining economic damage. After two decades, the costs to multiple governments is estimated to be hundreds of billions of dollars. The accident resulted in 7 million recipients receiving special allowance, pensions, and supported health care expenses.²

During the 1979 accident at Three Mile Island in Harrisburg, PA, the governor ordered pregnant women and children to evacuate, expecting 5,000 to leave. Over 140,000 people eventually fled the area. The resulting economic damages were filed as a lawsuit which eventually resulted in \$71 million in claims and litigation. This cost was the result of a class-action suit to recover economic loss during the evacuation.³

The Cape Cod National Seashore (CCNS) completed a 2014 study by UMass doctoral student Osmand Keshawarz on the economic impact of a disaster at Pilgrim focusing on the loss in tourism dollars and real estate values on Cape Cod. His key findings include:

- A small-scale release of radioactive material could result in an estimated \$741 million to \$1.6 billion loss in tourist revenue, and a loss in tax revenue to the State of Massachusetts of \$23 to \$62 million over five years.
- In the case of a large-scale disaster, Cape Cod is estimated to lose \$2.2 to \$12.1 billion in tourist expenditures and \$45 to \$71 billion in output over 10 years.
- The total value of all of the taxable property on the Cape is nearly \$75 billion.
- The CCNS generates \$175 million in revenue and creates 1,739 jobs.⁴

During the relicensing proceedings for Entergy's twenty year extension to operate to 2032, the MA Attorney General's Office completed a study in 2006 on the spent fuel pool risks. Dr. Jan Beyea, warned of the serious consequences of a spontaneous fire occurring due to the densely packed and tightly racked spent fuel assemblies. Originally designed to temporarily hold 880 assemblies and with no national repository to take the waste, the reactor license was amended by the Nuclear Regulatory Commission to store increasing amounts of highly radioactive waste on site. Pilgrim has reached the limit. With the pool about 360% over design capacity, the dangers of a waste pool fire and subsequent damage to the environment were identified. The AGO report's key findings of economic impact are:

- \$488 billion in damages
- hundreds of miles downwind contaminated
- 24,000 latent cancers straining health care costs⁵

² <http://www.iaea.org/sites/default/files/chernobyl.pdf> page 32

³ <http://nrc.gov/reading-rm/doc-collections/fact-sheet/nuclear-insurance.pdf>

⁴ <http://www.nps.gov/caco/learn/management/upload/Pilgrimreportimpactfinalv7.pdf>

⁵ <http://pbadupws.nrc.gov/docs/ML1209/ML12094A181.pdf>

To encourage private investment in the nuclear industry, federal legislation known as the Price Anderson Act placed a limit on liability with an insurance pool of \$12 billion. In fact, homeowners and liability insurance policies have exemptions from nuclear accident coverage. With the estimated costs of a radiological accident already estimated at over 40 times the amount held by the industry, compensation for property loss becomes almost nonexistent.⁶

Here in Massachusetts, the economic consequences from a radiological accident would be devastating to our economy due to the proximity to major population, education, historic, and industrial areas such as Boston and Providence, RI. The NRC has identified a 50 mile radius as the Ingestion Pathway Zone in which the State has planned for relocation of people due to land contamination. In a meeting this past April with Massachusetts Emergency Management Director Kurt Schwartz, the possibility of evacuation and subsequent exclusion zones was reinforced for this zone. With Cape Downwinders and MA Downwinders expressing concern of losing our property due to contamination and relocation plans, Director Schwartz affirmed 'swaths of Boston' could also be relocated. Exclusion zones would also be established according to which way the wind blows. (see attached Massachusetts map with Fukushima/Pilgrim plume exposure overlay map/Brian Boyle design). An impact to almost five million people is a real possibility. Losing our homes and livelihoods are a severe economic consequence from a radiological accident at Pilgrim.

Recent history provides examples of severe economic damage costing billions and billions of dollars from the consequences of nuclear power reactor accidents as experienced by people around the globe. The CCNS economic study warned us of the same potential risks to Cape Cod that would devastate our community. The AGO has documented the mitigation of a spent fuel pool fire due to densely packed and tightly racked storage configuration must involve removing the fuel to safer dry cask storage and reducing the amount in the pool. This action will decrease the risk of an accident and, thus, protect the economic interests of the State. S. 1797 would provide the incentive for Entergy to move the fuel to dry cask storage and provide funds for the town of Plymouth and surrounding communities most likely to be impacted by the storage of the high level nuclear waste and the related risks involved.

S. 1798 will protect the economic interests of the state by requiring Entergy to pay an annual fee of \$25,000,000 into a post-closure fund to ensure that decommissioning Pilgrim is completed without financial burden placed on Massachusetts taxpayers.

Entergy Corporation is already in financial distress with the recent announcements to close Pilgrim in 2019 and Fitzpatrick in upstate New York in 2016 due to poor market conditions and lower energy costs. Pilgrim alone is losing \$40 million per year for the company.⁷ This corporation has shown irresponsible economic decisions by failing to complete maintenance and upgrades on Pilgrim as cited by the Nuclear Regulatory Commission. The result will be the financial impact of up to a \$100 million in expected repairs and updates to meet NRC standards as reported by Senator Ed

⁶<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/nuclear-insurance.pdf>

⁷ <http://www.wsj.com/articles/entergy-plans-to-shutdown-pilgrim-nuclear-plant-by-june-2019-1444743133>

Markey.⁸ Entergy has proven it's inability to meet federal guidelines during operation by not investing capital into a degraded reactor. Why then would we expect the corporation to fully fund decommissioning after Pilgrim closes?

The Nuclear Regulatory Commission will make economic decisions on what is best for the nuclear industry. The example of shut down and decommissioning at Entergy's Vermont Yankee reactor sets a tone for what we can expect here in Massachusetts. Entergy has planned SAFSTOR which allows the corporation up to 60 years to restore the site. Entergy even has a TV show to promote this plan called 'SAFSTOR Matters', a product of pure corporate propaganda to convince the public that leaving a nuclear reactor site "as is" for up to 60 years is a good clean-up strategy.⁹

Entergy has also applied for and received a waiver from the Nuclear Regulatory Commission to use decommissioning funds, federally mandated for decommissioning only, for the purposes of spent fuel storage and tax payments. According to their own regulations, decommissioning funds are related to dismantling and site clean-up. However, as we see happening in Vermont, the NRC will allow the use of those funds to subsidize spent fuel storage and possibly tax payments basically regulating by exemption. The State of Vermont is challenging that ruling.¹⁰

Entergy's Vermont Yankee was closed due to financial reasons in 2014 without sufficient funds to decommission. With \$655,000,000 in the fund and the estimated costs of \$1,042,000,000 Entergy has extended the accrument period for full decommissioning funds to 2076. Decommissioning may not be completed for three generations.¹¹ With only \$890,000,000 in the Pilgrim account and the possible use of exemption to use funds for spent fuel storage, the decommissioning fund will decrease without serious federal oversight or intervention.

The federal NRC is not regulating in the best interest of the Commonwealth but supports the industry and their economic viability. The State must protect its economic interests by establishing this account so that taxpayers aren't left with a decommissioning costs. We the people should not be held accountable to subsidize the shutdown and clean up of Pilgrim. The underfunded decommissioning account is the full responsibility of Entergy and their shareholders who have profited for the past sixteen years. An escrow account of \$25 million per year paid by Entergy is a responsible measure to be set up by the State to ensure economic viability for timely decommissioning of Pilgrim and for timely site restoration. Any funds in excess for the resources needed to complete that decommissioning would be returned to Entergy.

Proactive legislation at this important time is required to meet our obligations to our children and future generations. The federal government already reneged on it's promise of a national

⁸ <http://www.markey.senate.gov/news/press-releases/senator-markey-statement-on-pilgrim-nuclear-power-station>

⁹ <http://vydecommissioning.com/>

¹⁰ <http://ago.vermont.gov/focus/news/vermont-attorney-general-department-of-public-service-and-two-utilities-ask-nuclear-regulatory-commission-to-review-entergys-use-of-vermont-yankee-decommissioning-trust-fund1.php>

¹¹ <http://vydecommissioning.com/wp-content/uploads/2015/01/BVY-15-002-Commingled-Funds-Exemption-Request.pdf>

repository for the spent fuel, today nowhere near any resolution. Their rules are arbitrary and full of smoke and mirrors to hide the real costs of decommissioning to benefit the industry at the detriment of public coffers.

Entergy has a fiduciary responsibility to its shareholders. This Committee has a fiscal responsibility to the people of Massachusetts. Use our precious tax dollars for the betterment of the people, not bail out for Entergy. State revenue is desperately needed to invest in our future: education, health care, housing, and green, clean energy. Transfer of costs and risks to future generations is not only irresponsible but immoral. This legislation is necessary to force change and protect the state interests.

We ask your full support for S.1797 and S.1798 and request the Committee immediately release the bills as emergency measures with a favorable recommendation.

On behalf of:

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On Behalf of Planet Earth/Metro Boston
Occupy Hingham/South Shore
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