



**TESTIMONY IN SUPPORT OF S.442 AN ACT RELATIVE TO PREVENTING THE
DISCHARGE OF RADIOACTIVE MATERIALS
BEFORE THE SENATE COMMITTEE ON RULES**

April 16, 2024

The Massachusetts Medical Society is a professional association of over 25,000 physicians, residents, and medical students across all clinical disciplines, organizations, and practice settings. The Medical Society is committed to advocating on behalf of patients, to give them a better health care system, and on behalf of physicians, to help them provide the best care possible. Decommissioning nuclear power plants has long been known to pose multiple health risks to workers and to residents of nearby communities. As the decommissioning of the Pilgrim Nuclear Power Station proceeds, it is important that the Commonwealth and its residents understand the health effects of the decommissioning process on surrounding communities. The Medical Society supports funding scientific studies to adequately evaluate the health effects of decommissioning the Pilgrim Nuclear Power Station on workers, residents, and the environment that might include evaluation of radioactive releases, collection of biometric data, and placement of appropriate radiation monitors prior to proceeding.

S.442, An act relative to preventing the discharge or radioactive materials, would establish a special commission tasked with studying the potential negative environmental and economic impacts caused by the discharge of spent fuel pool water created as a byproduct of nuclear energy production and prohibits the discharge of this spent fuel pool water until findings of the study are reported. This bill strongly aligns with the Medical Society's policy and represents an important step in understanding the environmental and health effects of the decommissioning process. The results of this study would be invaluable to not only the Commonwealth, but nationally as well, as the decommissioning of other nuclear stations proceeds across the country, with little data available on its effects.

While there is a dearth of data on the decommissioning of nuclear power stations, health risks posed by operating nuclear power stations are well known. Prominent among the health risks are radioactive isotopes and nuclear waste. Radioactive isotopes and nuclear waste are proven causes of human cancer. While high-dose exposures to these materials are the most highly carcinogenic, any exposure to radiation carries some risk of cancer; infants in the womb and young children are especially vulnerable to even low doses of radiation. The scientific consensus is that every additional exposure to radiation adds to the total risk for genetic damage and thus increases risk for blood cancers like leukemia; increased radiation exposure results in increased incidence of these diseases in exposed populations; for solid cancers, such as lung cancer, bone cancer, and thyroid cancer, the risk for cancer from radiation is directly proportional to cumulative exposure.

Pilgrim Nuclear Power Station has specifically been associated with increased leukemia incidence in the local community. A study conducted by Dr. Richard Clapp, former Massachusetts state cancer epidemiologist and Professor Emeritus of the Boston University School of Public Health, found a fourfold excess of leukemia cases among persons who lived or

worked near the Pilgrim nuclear power plant. The leukemia risk was highest in persons with the greatest exposure, demonstrating a positive dose-response relationship. The study also showed increased infant mortality and an elevated incidence of thyroid cancer.¹

While more exposure is always worse, even low-dose exposures to radiation increase cancer risk, according to the National Academy of Sciences BEIR VII report, especially among vulnerable populations such as pregnant women, fetuses, and young children. Exposure to ionizing radiation in early life can cause lifelong damage and increase risk of cancer across the lifespan.² The risks of radiation to children are much greater than those to adults because induced mutations usually occur during the DNA replicative process that accompanies cell division, and cells in the embryo, fetus, and children are dividing at much more rapid rate than in adults. Infants, children, and pregnant women are therefore particularly vulnerable to any radiation emitted from the Pilgrim Nuclear Power Station.

Due to these significant, known health risks of nuclear power stations, it is important to conduct scientific studies to understand the health and environmental risks posed by the decommissioning process. Thank you for your consideration of our comments and for your important work on this pressing topic. The Medical Society respectfully urges adoption of S.442, *An act relative to preventing the discharge of radioactive materials*.

¹ Clapp RW, Cobb S. Leukemia and other health outcomes in the vicinity of the Pilgrim Nuclear Power Station, Plymouth, MA. United States. Archives of Environmental Health. Journal Volume: 45:5; Conference: 1. Annual meeting of the International Society for Environmental Epidemiology, Upton, NY (USA), 13–15 Sep 1989. <https://www.osti.gov/biblio/5735008>

² [Health Risks from Exposure to Low Levels of Ionizing Radiation, BEIR VII, Phase 2](https://www.epa.gov/radiation/radiation-health-effects)
<https://www.epa.gov/radiation/radiation-health-effects>