252,032 nuclear fuel rods are stored on-site at Maine Yankee. Each rod contains approximately 400 uranium fuel pellets, totalling over 100 million highly radioactive fuel pellets.

In order to identify the radiation exposure pathways, one must answer the question, “Who receives the dose?”

Maine Yankee has chosen the scenario known as the “resident farmer scenario.” In this case, the farmer is resident on the site, obtains drinking and irrigation water from the most contaminated portion of the site, and eats the crops and animals grown from the well water. It is problematic that this scenario does not include the effects on pregnant women or children who are more vulnerable to exposure, nor consider the possibility of leaks or accidents in the waste storage containment tanks.

Safe disposition of the radioactive waste is the responsibility of the federal government, yet it continues to be temporarily stored on 11 acres onsite. According to the Nuclear Regulatory Commission (NRC), sixty sealed steel and concrete canisters contain 1,432 complete fuel assemblies. Each of these assemblies contain 176 zirconium alloy fuel rods, filled with radioactive uranium oxide fuel pellets. The NRC reports that the site also holds two partial assemblies and two partially-full failed fuel rod containers in onsite storage.

Used fuel is called “spent,” and is classified as High Level Waste because it is still highly radioactive and thermally hot. There is no site to permanently store this waste even though the Nuclear Waste Policy Act of 1982 mandated that the government build a facility. The proposed Yucca Mountain nuclear waste site in Nevada was suspended.

“Nuclear energy is not carbon free.”

When the nuclear power industry claims that the energy is “carbon-free,” it does not take into consideration the critical front-end or back-end of the process. Perceptions of carbon-free and carbon-neutral consider only the carbon emissions during plant operation, not the true carbon footprint. Millions of tons of carbon emissions are generated during various stages in the production of nuclear energy, including but not limited to: uranium mining and milling; conversion of ore into yellowcake and uranium hexafluoride (UF₆); construction of cylinders used to transport UF₆; enrichment processes; fabrication of fuel pellets and assembly of fuel rods; construction of supporting infrastructure including roads and transmission lines; power plant construction; transportation of fuel; generators used for maintenance, shut-downs and power outages; waste processing, incineration and vitrification; decommissioning and demolition of the plant and other support structures; manufacture of storage containment; maintenance of storage; security; clean-up efforts of accidents and incidents; monitoring, securing and periodically re-entombing waste into eternity.

“For planning purposes, Maine Yankee has assumed the high level waste repository or some interim storage facility will be operational by 2034.”**

However, no such facility exists or is currently under construction.