The Pilgrim Nuclear Power Station in Plymouth has made Toxics Action Center's annual list of dirtiest polluters in New England for the fourth time since 1997.

The environmental organization included Pilgrim — owned by Entergy Nuclear — on this year's list of what the group claims are repeat offenders.

"When this plant was built, no one thought that it would be still operating today in 2012," said Sylvia Broude, executive director of the Toxics Action Center.

The plant poses risks to Cape Cod Bay from its cooling system, from radiation leakage and from the potential of a nuclear accident, Broude said.

Pilgrim was opened in 1972 and received a new 20-year license to operate in May.

Pilgrim should be decommissioned and its nuclear waste moved to dry cask storage on the plant's property, Broude said.

"One problem is there is no permanent solution. This waste will remain a risk for thousands of years," she said.

Entergy spokesman Rob Williams said the company does not understand how Toxics Action came to their conclusion about Pilgrim.

"It's our understanding that they don't recognize that nuclear power displaces the need to burn fossil fuel and that's a great benefit to the environment," Williams said. "As global warming continues, I think most environmentalists will support nuclear power."

Toxics Action Center's "Dirty Dozen" list profiles 12 of New England's "egregious polluters who have failed to take appropriate action to address their pollution problems," according to the group's website.

Waste disposal companies, an electric utility, Superfund sites and landfills also made this year's list. Entergy Nuclear's nuclear plant in Vermont was listed alongside Pilgrim.