BNFL Sellafield was plotted in Fig. 3, together with those for ¹³⁷Cs, ²⁴¹Am and ²³⁷Np to compare sedimentation behaviors (or mobility) of these nuclides.

If sedimentation behaviors of these nuclides are similar to 239,240 Pu, inventory ratios are expected to be constant independent of the distance from Sellafield. As known from Fig. 3, 99 Tc/ 239,240 Pu inventory ratio increases steeply with the increase of shore-line distance from Sellafield indicating that mobility of 99 Tc is higher than that of 239,240 Pu. This may be explained that chemical form of 99 Tc in marine environment is Tc_2O_7 , which is considered to be stable in sea water.

According to the slope of the lines, mobility is considered to be decreasing as follows: $^{99}\text{Tc}>^{137}\text{Cs}>^{237}\text{Np}>^{239,240}\text{Pu} \ge$ ^{241}Am .

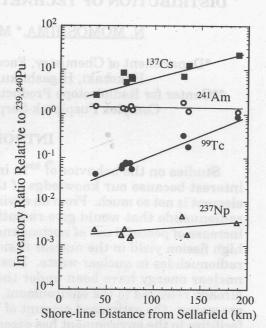


Fig. 3 Inventory ratios of ⁹⁹Tc, ¹³⁷Cs, ²⁴¹Am and ²³⁷Np relative to ^{239,240}Pu

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100 I plastic containers from one of the utilities supplying fresh seawater to experimental aquariums in the laboratory. The sampling was carried out mediater and in summer in 1993. At the sampling in summer, seawater was use collected into a 50 I plastic centainer for 13 Canalysis. The sample volume of the sampling date are summarized in Tables 1. Schnetium 39 in the sample was enriched by the repetitive coprecipitation nethod (4), and 13 Ca in the sample was adsorbed on ammonium Solvedephosphate (AMP).

Surface ocean seawaters in the North Pacific Ocean, the South Pacific Ocean, and Tasman Sea were sampled during the oceanographic expedition. The ship left Harring when Taken in Seatember 16.