Monitoring of Radionuclides in the Waters off Fukushima and Nearby Prefectures, Japan

137Cs in Seawater, Sediment and Fish prior to the Accident

Since 1984, Marine Ecology Research Institute (MERI) have been monitoring the coastal areas for radionuclides in proximity to nuclear power plants all over Japan under the contract with the Japanese Ministry of Education, Sports, Science and Technology (MEXT). The monitoring includes seawater (surface and bottom waters), sediment, and fishes. The 137Cs concentrations in seawater and sediments have been almost constant to be 0.0016 ± 0.0002 Bq/L and 0.87 ± 0.41 Bq/kg, respectively, for 5 years prior the accident. Those in fishes were in a range from 0 to ca 0.2 Bq/kg depending on species.

Monitoring the Waters

Immediately after the Fukushima Daiichi Nuclear Power Plant (FDNPP) accident in 2011, MEXT launched an additional monitoring program to survey the accident’s impact in the waters off Miyagi, Fukushima, and Ibaraki Prefectures. In April 2013, the program was taken over by the Nuclear Regulation Authority (NRA).

137Cs in Seawater

In early May 2011, 137Cs-polluted water migrated to the north and then a part of the water detached and went to the south. Two cores of the waters with high 137Cs concentration persisted at least by July 2011.

137Cs exponentially declined with time after the concentration reached a maximum value in April 2011 (186 Bq/L).

Currently, the majority of 137Cs concentrations are less than 0.01 Bq/L.

Relatively high concentrations of 137Cs were observed in stations close to coast, located at the south of the FDNPP.