

Global dispersion of radionuclides due to the Fukushima Daiichi Nuclear Power Plant accident

By the accident at the TEPCO's Fukushima Daiichi Nuclear Power Plant following the Great East Japan Earthquake of March 11, 2011, a large amount of radioactive materials were released into the environment and spread on a global scale. The radionuclides plume released from the NPP by the accident went around the northern hemisphere eastward in about 12 days to Siberia through the plume flow of the Kamchatka Peninsula→North America→the North Atlantic Ocean→Europe. Figure 1 shows the detection of Xe-133 at the radionuclide stations after the accident. Figure 1 illustrates that the activity concentration level of Xe-133 near each station in the Northern Hemisphere was almost homogenized by diffusion in early April of the same year, and thereafter, the concentration level at each station in the Northern Hemisphere generally decreased according to the half-life of Xe-133 (about 5.27 days) and returned to the normal level before the accident around early June. It was also confirmed that part of the Xe-133 plume diffused to some radionuclide stations in the lower latitudes of the southern hemisphere.

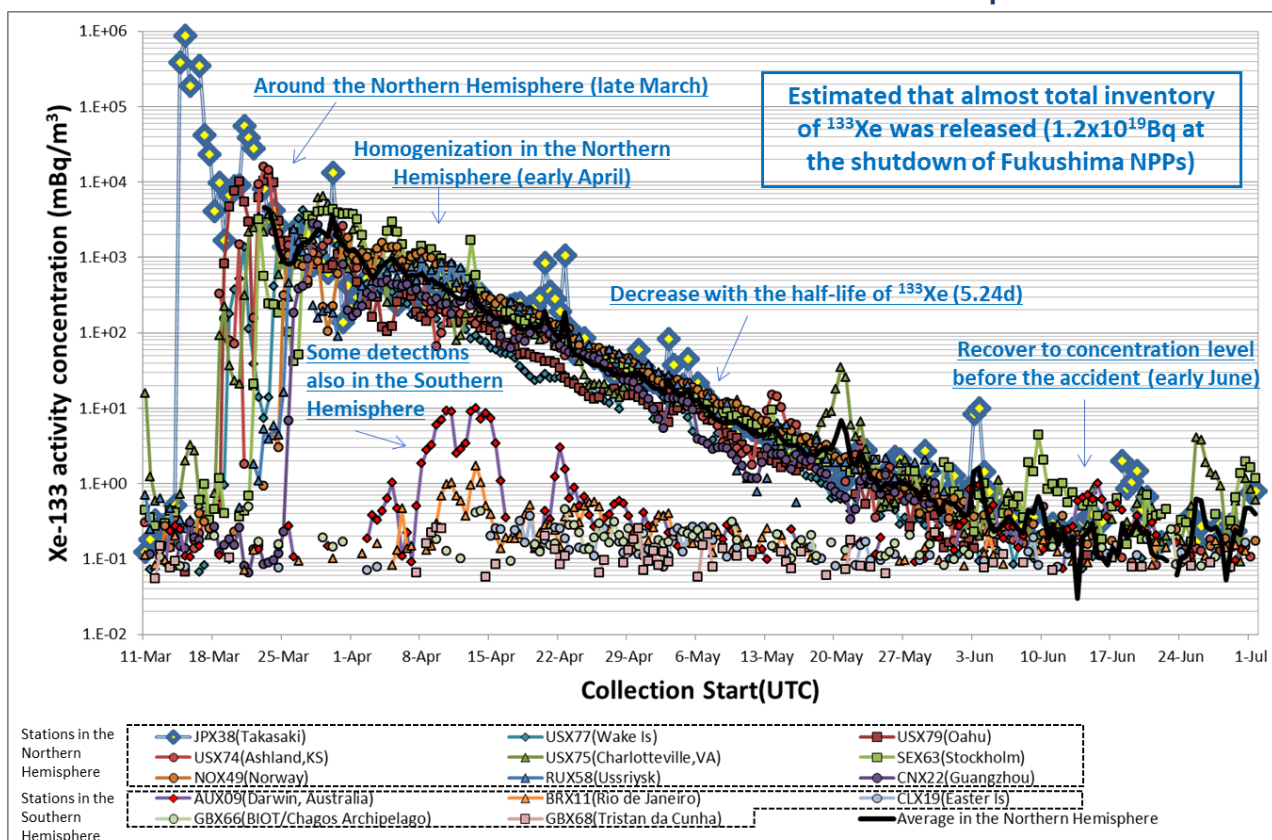


Fig.1 Changes in activity concentrations of Xe-133 at the radionuclide monitoring stations after the Fukushima Daiichi Nuclear Power Plant accident