## #2 Consequences for the Ocean #25

## Transuranic nuclides and <sup>90</sup>Sr in seafloor sediments off the Fukushima Daiichi Nuclear Power Plant GY RESA Masatoshi Yamada\*, Shinji Oikawa, Yuhei Shirotani, Masashi Kusakabe, Koji Shindo **MERI**

Central Laboratory, Marine Ecology Research Institute, 300 Iwawada, Onjuku, Isumi, Chiba 299-5105, Japan

\*E-mail:m-yamada@kaiseiken.or.jp

1. Purposes:

(1)to measure the <sup>238</sup>Pu, <sup>239+240</sup>Pu, <sup>241</sup>Am, <sup>242</sup>Cm, <sup>243+244</sup>Cm and <sup>90</sup>Sr concentrations in surface seafloor sediments collected off the Fukushima Daiichi Nuclear Power Plant (FDNPP) site every year during 2012 to 2019 and to trace the temporal changes of the measured radionuclides;

(2) to measure the <sup>238</sup>Pu, <sup>239+24</sup>Pu, <sup>241</sup>Pu and <sup>241</sup>Am concentrations and <sup>240</sup>Pu/<sup>239</sup>Pu atom ratios in a sediment core collected there in 2012; (3) to evaluate the impacts of the FDNPP accident releases of transuranic nuclides and <sup>90</sup>Sr to the surface sediments by comparing with reported radionuclide

concentrations before and after the accident:

(4) to evaluate the relative contribution of the global fallout Pu and the close-in fallout Pu from the Pacific Proving Grounds (PPG) in the sediment column.



> The main <sup>90</sup>Sr source still remains as global fallout.

8. Reference

Contributions of the PPG close-in fallout agreed well with each other.

Yamada, M., S. Oikawa, Y. Shirotani, M. Kusakabe, K. Shindo: Transuranic nuclides Pu, Am and Cm isotopes, and <sup>90</sup>Sr in seafloor sediments off the Fukushima Daiichi Nuclear Power Plant during the period from 2012 to 2019. Journal of Environmental Radioactivity, 227, 106459. (2021) https://doi.org/10.1016/j.jenrad.2020.106459

