



Radioactivity Measurement in Japan-imported Seafood before and after the Release of the ALPS-treated Water

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Abstract:

Twelve years after the Fukushima-Daiichi Nuclear Power Plant (FDNPP) accident in Japan in 2011, Tokyo Electric Power Company (TEPCO) and the Government of Japan released 1.4 million tons of Advanced Liquid Processing System (ALPS) treated water into the ocean starting in August 2023. The release will continue over the next 30 years causing concerns in several countries over food safety both imported seafood from Japan and local seafood, and possible radioactive contamination in the marine ecosystem. To address such concerns in Thailand, relevant national competent authorities consisting of Department of Fisheries (DOF), Food and Drug Administration (FDA), Thailand Institute of Nuclear Technology (TINT), and Office of Atoms for Peace (OAP), have carried out a comprehensive monitoring program. Prior to the planned release, four different types of Japan-imported seafood including halibut, salmon, oyster, and wakame seaweed collected from areas nearby the Fukushima-Daiichi NPP were bought from the seafood market in Bangkok in 2021 and 2022 for Cs-137 and Co-60 measurements using HPGe Gamma Spectrometry. Ranges of <0.002 - 0.53 Bq/kg and <0.02 - <0.32 Bq/kg were found for Cs-137 and Co-60 in the analysed seafoods. Immediately after the 1st discharge, 81 imported seafood (pelagic and benthic fish, crustacean, and mollusca) from Japan were randomly collected at the ports of arrival. The results showed that the Cs-137 and Co-60 concentrations in all seafood of interest were lower than the Minimum Detectable Activities (MDAs) ranging from <0.53 to <1.38 Bq/kg and from <0.40 to <1.51 Bq/kg, respectively. There are no elevated Cs-137 and Co-60 values observed in the Japan-imported seafood analysed in this present work after the release of the ALPS-treated water when compared to the measured values obtained before the release. And the value is lower than the standard criteria of CODEX STAN 193-1995, in which the concentration in food must not exceed 1,000 Becquerel per kilogram. It can be concluded at this point in time that consuming the imported seafood from Japan will not cause any radiological health risks to Thai seafood consumers.