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Cs-137 Background Measurement in the Marine Environment of the Asia-Pacific Region to Support Emerging Challenges of On-Site Inspection (OSI) in Seas

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Under the Comprehensive Nuclear-Test-Ban Treaty (CTBT), On-Site Inspection (OSI) is the final CTBT tool to be used for proofing suspicious nuclear explosions after entry-into-force of the treaty. Over a decade, a huge attention has been paid on the development and testing of On-Site Inspection (OSI) procedures, techniques, and equipment to reveal whether or not underground nuclear testing actually occurred. New challenges causing concerns over international peace and security have recently been emerging and discussed. There might be a possibility of suspicious events in other than underground and underwater testing in marine & coastal seas is among them where nuclear explosions could take place. Not only further capacity building of potential on-site inspectors and development of appropriate OSI techniques but the radioactivity database of the OSI-relevant gamma-emitting radionuclides in marine & coastal environment is also needed. This recent work aims to review and summarize Cs-137 radioactivity in seawater, sediment, and biota from several countries in the Asia-Pacific region. These data would play a vital role as a reference/background data in case of any future underwater nuclear explosions. Through skill-enhanced inspectors, well-developed procedures, and comprehensive radioactivity data, the CTBT's goal to end nuclear testing could be achieved.

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