

海陸域環境輻射調查與國民輻射劑量評估(1/4)

Environmental radioactivity survey of marine and coastal area and population dose assessment of Taiwan(1/4)

主管單位：行政院原子能委員會

執行單位：行政院原子能委員會輻射偵測中心

李明達

劉任哲

高薇喻

蔡文賢

Ming-Da Lee

Ren-Jer Liu

Wei-Yu Kao

Wen-Hsien Tsai

洪明崎

徐明德

Ming-Chi Horng

Ming-Te Hsu

摘要

日本福島事件後，民眾對於環境的輻射劑量與輻射對海域的影響更為關注。本計畫推動台灣海域輻射監測調查與國民輻射劑量評估，透過跨部會合作與參考國際文獻，先以海水、海生物及累積試樣(岸沙及海底沉積物等)為海洋主要分析樣品，並選擇銫-137為調查分析之關鍵核種；另就國民輻射劑量主要來源，規劃重新調查。本計畫為108年-111年為期4年的中長期計畫，106年及107年為先期計畫，108年起依先期計畫規劃內容執行，先充實台灣海域輻射背景調查資料，未來再建立台灣海域輻射背景資料庫，健全台灣海陸域環境輻射數據，進而能掌握日本福島核災事故及大陸沿岸核能電廠等放射性廢水排放對台灣海域影響及變化趨勢。108年的國民輻射劑量評估則以醫療輻射先期建置為主，先蒐集八大類醫療輻射健保資料與建立評估軟體，並獲得室內外體外輻射劑量與氬氣及食品等體內劑量重新評估的初步結果。

關鍵詞：海陸域背景、監測、輻射劑量、氬氣、醫療輻射

Abstract

After Fukushima incident, more and more people care about the radiation around our living area and impact of ocean ecosystem. For the health of Taiwanese people, this project promotes Taiwan sea area radiation monitoring and population dose assessment and seeks cross-departmental cooperation.

After evaluation, seawater, marine organisms and cumulative samples (shore sand and seabed sediments) were used as the main analytical samples, and cesium-137 was selected as the key nuclear species for investigation and analysis. In 2017 to 2018, the plan was the early plan for the future medium and long-term plan, and in 2019, it will be implemented according to the plan of the

prior plan, hoping to enrich the radiation background investigation data in Taiwan's seas and establish a radiation background database in the future, improve the environmental radiation background of Taiwan's sea and land areas, and then grasp the trend of the impact of radioactive wastewater discharge from the Fukushima nuclear disaster and the nuclear power plant in China on Taiwan sea area to ensure radiation safety.

Population dose assessment mainly focuses on medical radiation dose contribution. Medical radiation sources are divided into 8 categories base on the National Health Insurance Research Database of Taiwan. Other radiation sources like external and internal radiation dose from terrestrial gamma, cosmic ray, foodstuff and radon are also preliminary reassessed.