

## **Assessment of marine radiological impact after an hypothetical nuclear accident in East Mediterranean Sea**

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Modeling exercises of radionuclides dispersion in the marine environment is considered a particularly effective tool for the improvement of radioecological assessments and the development of proper radioprotection strategies [1]. Eastern Mediterranean Sea is rapidly affected by climate change and extensive anthropogenic pressures and it can be vulnerable in case of a possible nuclear accident in Akkuyu NPP, starting its operation in 2023. In this frame, a basin scale 3-D hydrodynamic model coupled with a Lagrangian particle drift model was developed to investigate the dispersion and fate of key radionuclides released from a hypothetical accident and how this will affect the neighboring marine regions [2, 3].

Based on the estimated activity concentrations and proper site specific information (radiological coefficients for doses estimation, marine biota conversion factors, habitants' sea food consumption and marine occupancy) [4], the dose received by representative marine organisms and the affected human population has been estimated. The environmental sensitivity analysis carried out considering the international authorities recommendations and criterions of environmental protection revile the most venerable features of the region and the main parameters controlling the radioecological process.

[1] IAEA, TECDOC **1719**, 156 p. (2013)

[2] C. Tsabaris *et al.*, Prog. Nucl. Energy **139**, 103879 (2021)

[3] C. Tsabaris *et al.*, J. Environ. Radioact. **251-252**, 106964 (2022)

[4] G. Eleftheriou and M. Iosjpe, J. Environ. Radioact. **222**, 106360 (2020)