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Radioactive operations on board research vessels.

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Radioactive operations on board research vessels must be controlled. This will generate benefits on the operation of other toxic substances. The need for control is justified because of public health implications, dealt with by Radiation Protection measures and, second, because scientific work can be affected by sample contamination.

In Spain strict legislation exists for radioactive installations, though no specific normative has been designed for ship operations. However, legislation implicitly recognises that any laboratory handling radioactive sources is a radioactive installation. In this sense, we understand that radiochemical laboratories in research vessels are of the 3rd Category, in which maximum activities are, for example, 130 mCi for ^3H and 13 mCi for ^{14}C . The maximum activity for ^{14}C poses an important problem as it is claimed by users to be too low for long cruises and for multi-laboratory use. However, it should be taken into account that the activity used per sample is possibly too high for new instrumentation and that, therefore, method development should be carried out.

In the case of B.I.O. Hespérides (Spain), the radioactive installation is run as an independent installation of the 3rd category. The procedure used nowadays includes information to the user, application to use the laboratory, full source identification, brief operations description, radioactive waste treatment, and analysis of possible accidents and countermeasures. A laboratory manual is provided. The Radiation Officer provides technical assistance, revise applications to use the laboratory and controls the radiological condition of the laboratory after use. In the future, full licensing should be obtained and vessel staff should include a permanent Radiation Officer. In order to reduce risk, research on the reduction of activities used should be encouraged.

Some questions are, finally, put forward: how is this issue managed in other countries, which are the maximum activities allowed on board and how are other toxic substances managed in comparison with radioactive materials.