



## QUALITY CONTROL ACTIVITIES IN THE ENVIRONMENTAL RADIOLOGY LABORATORY

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During the last twenty years many analytical laboratories have implemented quality assurance systems. A quality system implementation requires documentation of all activities (technical and management) evaluation of these activities and its continual improvement. Implementation and adequate management of all the elements a quality system includes are not enough to guarantee quality of the analytical results generated at a time. That is the aim of a group of specific activities labelled as quality control activities.

The *Laboratori de Radiologia Ambiental* (Environmental Radiology Laboratory LRA) at the University of Barcelona was created in 1984 to carry out part of the quality control assays of the Environmental Radiology Monitoring Programs around some of the Spanish nuclear power plants which are developed by the Servei Català d'Activitats Energetiques (SCAR) and the Consejo de Seguridad Nuclear (CSN) organisations responsible for nuclear security and radiological protection. In these kind of laboratories given the importance of the results they give quality control activities become an essential aspect. In order to guarantee the quality of its analytical results the LRA Direction decided to adopt the international standard UNE-EN ISO/IEC 17025<sup>3</sup> for its internal quality system and to accreditate some of the assays it carries out.

In such as system it is established the laboratory shall monitor the validity of tests undertaken and data shall be recorded in such a way that trends are detectable. The present work shows the activities carried out in this way by the LRA which are:

- Equipment control activities which in the special case of radiochemical techniques include measurement of backgrounds and blanks as well as periodical control of efficiency and resolution
- Activities to assure the specifications settled by method validation which are testing of reference materials and periodical analysis of control samples
- Evaluation of the laboratory work quality in front of other laboratories by participating in interlaboratory exercises specially in proficiency tests
- Adequate analysis of the information generated in all these activities which includes proper recording and management supervision

**Keywords** *radioactivity, accreditation, quality assurance, quality control, control charts*

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<sup>3</sup> Norma UNE EN ISO/IEC 17025 2005 Requisitos generales relativos a la competencia de los laboratorios de ensayo y calibración (Spanish edition of the international Standard ISO/IEC 17025)