The Radiation Protection Sector "Electronic Instrumentation Laboratory" (Label) at the Joint Research Centre, Ispra

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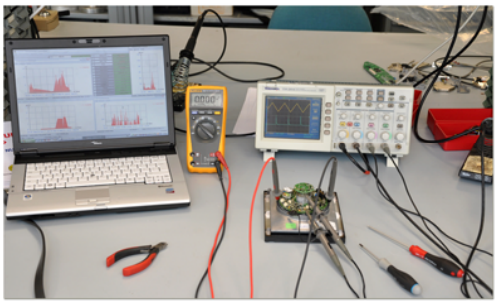
1. INTRODUCTION

The Joint Research Centre located in Ispra, is one of the research sites belonging to the European Commission, Directorate General JRC. It was created in the late 1950s, in order to steer European research in the nuclear field. Within the Nuclear Decommissioning Unit, the Electronics laboratory "LabEI", as part of the Radiation Protection Sector, is committed to the purchase, preparation, allocation, analysis, electronic calibration, performance check and repair of fixed and portable nuclear instruments in use at the site.

2. METHOD

The LabEI manages a large number of radiation protection instruments (radiation detectors and monitoring systems) including approximately, 200 portable instruments, 100 fixed monitoring stations, and 300 electronic dosemeters.



Instruments include portable dose rate monitors and contamination monitors for direct measurements, personal dose rate monitors, electronic dosemeters, pedestrian and vehicle portal monitors, neutron monitors, hand and foot monitors, air samplers, scintillation detectors etc.

The LabEI mission is to ensure the correct functioning of all radiation protection instruments, by electronic calibration and daily performance checks; tracking of instrument allocation for daily radiation protection surveillance tasks, including follow-up of malfunctioning instruments and repair.

LabEI activity also involves Radiation Protection Technicians' continuous training, drafting of instrument operating procedures, and the complete life dossier follow-up for each radiation detection instrument.

Specific software has been developed, in order to accomplish those tasks according to the Quality Assurance regime in force at the Nuclear Decommissioning Unit. Each instrument has a barcode which allows complete life cycle tracking such as calibration, calibration expiry, damage spare parts, periodical check history and efficiency checks. By linking the information with a barcode on the Radiation Protection Technicians badge it is possible to associate an instrument to a user.

Every instrument that is required on a daily basis is checked by than electronics technician with a quick review of background values, calibration verification, battery and alarms checks.
The Maximum Alpha and Beta deviation allowed from the reference value is ± 20%.
The Maximum Gamma calibration deviation allowed from the reference value is ± 10%.
The reference value used in the checks is obtained after every calibration.
Calibration is on an annual basis or immediately after any repair.
Calibration checks are every six months and after every calibration.

3. CONCLUSIONS

The JRC Ispra Electronics Laboratory provides integrated laboratory services with procedures and methods that are mandatory to ensure the safety and security of Radiation Protection Technicians and JRC staff in the course of their work.
The LabEI also provides Radiation Protection training to ensure that the instrumentation is used in an appropriate manner to the latest procedures.

4. CONTACTS

http://dwm.jrc.ec.europa.eu

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