

Dose Assessment and Dose Registry

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The activity of the Dose Assessment and Dose Registry unit is directed towards the assessment of doses to the Portuguese population due to several types of exposure to external radiation.

The activities developed in 2004 were mainly based on the performance of the individual monitoring service of ITN in the fields of individual and environmental monitoring.

In 2004 the main activities developed and improved at this Unit were focused on:

Assessment of the occupational radiation doses: In the beginning of 2004 the Individual Monitoring Service (IMS) of ITN provided individual monitoring for external exposure to approximately 9,500 workers in Portugal, nearly 90% of the monitored population in the country. Two monitoring systems were simultaneously operating, one based on film dosimetry and the other one on thermoluminescence dosimetry (TLD).

In January 2004 the IMS saw a strong staff reduction followed by no replacements and as a consequence film monitoring was discontinued by the end of March. The number of workers monitored with TLD was also reduced.

At present (December 2004) nearly 30% of the monitored population is still controlled at ITN's IMS.

Improvements to the Central Dose Registry and analysis of the occupational exposure data: The Decree-Laws 165 and 167 of 2002 entrust to ITN the task to create and maintain a Central Dose Registry (CDR) that should be made available to the Directorate-General for Health and the National Commission on the Prevention of Professional Risks. Full compatibility of the CDR and the databases in use at the IMS of ITN was reached in 2004. The CDR is presently ready for the insertion of the dose data evaluated by other services operating in Portugal.

The analysis of the occupational exposure data is also one of the aims of this work. The determination of the distribution of workers by dose intervals and the estimates of the average and collective doses by working activities are essential elements to the improvement of individual monitoring in Portugal.

Improvements to the quality control program: In 2004 the quality control program implemented at the TLD sector was internally evaluated. An optimisation and performance testing of the TLD system was carried out and some modifications were introduced.

The results allowed for the continuous improvement of the performance, taking into the account the intention to apply for Accreditation according to the ISO 17025 Standard, due to take place in 2005.

Assessment of the cosmic radiation dose received by aircrew: As a result of an on-going collaboration with the Serviço de Ginecologia e Obstetrícia of the Hospital da Força Aérea Portuguesa, the in-flight cosmic radiation doses received by aircrew in military transport flights is being estimated using specific software programs.

Assessment of the environmental gamma radiation dose to the Portuguese population: Environmental monitoring was re-started in 2004 as one of the tasks concerning the accomplishment of Article 35 of the Euratom Treaty.

This Unit also collaborated to the MinUrar project performing the evaluation of the natural gamma radiation dose in dwellings in the vicinity of former Uranium mines.

Active collaboration in international working groups developed in the framework of both EURADOS and ESOREX activities, took also place in 2004:

Eurados – European Radiation Dosimetry group: Working group 2 of Eurados entitled *Harmonization of Individual Monitoring in Europe* was active in the period 2001-2004. The activity of this working group will be continued in the next three years directed to important issues of individual monitoring.

Esorex – European study on occupational exposure: The activity of the Esorex 2005 working group started in December 2004. The Esorex 2005 also aims at an update of the information related to individual monitoring in Europe and to analyse the occupational radiation dose distributions at a European level, in the 2001-2005 period. A harmonization of the activities and the dose intervals in use at the CDR for report purposes is envisaged in the EU.

Radiation Protection Training Courses were also organized. The Training Courses were prepared for internal collaborators at ITN and for radiation users external to ITN upon request.

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Research Team

Researchers

- J.G. ALVES, Aux. Researcher, Group leader
- M.B. MARTINS, Principal Researcher
- E.M. AMARAL, Auxiliary Researcher

Students

- J.N. ABRANTES, Trainee ITN Grant
- L.C. NOVAIS, Trainee FCT-Euratom Grant (since 21-Nov-04)

Administrative Personnel

- J.V. MONTEIRO

Technical Personnel

- G.C. RANGEL
- C.M. FAVINHA
- S.S. RANGEL (since 01-Apr-04)
- O.C. MARGO (sick: absent since 08-Apr-04)
- M.A. GAMEIRO (transferred on 15-May-04)

Funding (€)

Research Projects:	0
Services:	159.625,95
Total:	159.625,95

Publications

Journals:	3 and 2 in press
Proceedings:	4
Conf. Communications:	2