

**IRD – Instituto de Radioproteção e Dosimetria**

**LNMRI – Laboratório Nacional de Metrologia da Radiações Ionizantes**

**LN – Laboratório de Nêutrons**

**Progress Report 2002-2003**

**1. Routine calibration of neutron survey meters and neutron pocket dosimeters**

In order to attend our national regulations, up to now were performed the routine calibration of 140 equipment.

**2. Neutron sample irradiation**

162 samples of different kinds used by other research groups were irradiated.

**3. IRD albedo neutron dosimeter – New quantity tests**

The IRD albedo neutron dosimeter was developed to make measures in terms of MADE. Now tests are been performed to evaluate its response to the new quantity personal dose equivalent.

**4.  $^{252}\text{Cf}$  spectrum D2O moderated**

New ISO neutron reference field is now in use for performing mainly the calibration of neutron personal dosimeters.

**5. Set up of a neutron generator**

It is been made a study from a donated neutron generator to be used in our laboratory in order it can be obtained another representative ISO neutron spectrum.

**6. Monte Carlo calculations**

The Monte Carlo code MCNP is been used for determination of several experimental parameters which come out since our primary standard sulfate bath until the simplest calculations in the survey calibration room.

**7. Participation in CCRI comparison of measurements of Neutron source emission rate.**

Laboratory has ended in the last month its measurements and the source is travelling for NIST/USA. The neutron laboratory primary standard based on sulphate manganese bath was used in this comparison to make the measurements of the neutron source emission.

**8. Participation in QUADOS Monte Carlo Intercomparison**

Laboratory has included a result of one of the studied works in this intercomparison on the usage of computational codes in radiation dosimetry to be held in July 2003.

**9. Participation in SILENE intercomparison**

Laboratory sent criticality dosimeters and albedo dosimeters to participate in criticality intercomparison at SILENE Reactor in June 2002

**10. Scientific Visit**

Dr Evaldo Simões da Fonseca LANL/USA

Dr Walsan Wagner Pereira to NPL/UK

**11. Quality System**

Implementation of the main requirements of NBR 17025 and revision of three proceedings for quality system.

**12. VI ENAN – National Meeting on Nuclear Applications**

The Following paper was presented at IV ENAN – National Meeting on Nuclear Applications 2002 august - “Cálculo de Monte Carlo da constante de taxa de dose na água para a semente de  $^{192}\text{Ir}$ ”, Cosme Norival Mello da Silva e Evaldo Simões da Fonseca.