

**ASSESSMENT OF RADIATION DOSIS AT THE INSTITUTO DE PESQUISAS ENERGÉTICAS E NUCLEARES**

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External monitoring for air dose measurement using thermoluminescence  $\text{CaSO}_4:\text{Dy}$  dosimeters put in fixed points was done inside the IPEN-CNEN/SP area. This measure was done with the objective to understand the influence of nuclear and radioactive facilities inside the IPEN-CNEN/SP workplaces into the environment.

The adopted method involves the use of 'TLD'S, which measure dose rather than dose rate. TLD's are placed in the field, at the point where the dose is to be measured, for a period of 3 months, and then read out at the same time as reference dosimeters treated similarly in the same general site, but not exposed to radiation. The badge used consist of a small double layer containing three TLD discs of  $\text{CaSO}_4:\text{DY}$ , inside an outer holder normally used in routine personal dosimetry. Using this badge, in the laboratory it is possible to measure doses as low as  $1 \mu\text{Gy}$ , with an error of approximately  $0.2 \mu\text{Gy}$ , but in field measurements the limit of detection is probably an order of magnitude higher.

This study was carried out to evaluate the radiation level for electromagnetic radiation in different places at IPEN-CNEN/SP. The reference values obtained for background level was  $77 \text{ nGy/h}$ . The observed results at the previously established points was up to 15 times the background level. From the results of this evaluation we could get a gross estimation of plant influence and specific influence of some types of sources.

This analysis opens a window to make in the near future, more accurate studies to evaluate the contribution of each installation to background dose variation and what is its contribution to collective dose of IPEN-CNEN/SP population, inside the facilities, as well in those people that suffer contributions from each facility.