

ABSTRACT

Radiation dose monitoring of workers in nuclear medicine units is an important part of implementing radiation protection and safety to ensure occupational safety from exposure to ionizing radiation. Dose evaluation was carried out using a *Thermoluminescent Dosimeter* (TLD) to determine the amount of radiation dose received by each radiation worker during the performance of their duties. This study aimed to evaluate the radiation dose values of workers in the nuclear medicine unit based on TLD reading results during the 2021–2025 period.

The evaluation results showed that nuclear medicine specialists obtained a Dose Reading Value (*Nilai Pembacaan Dosis/NPD*) of 1.085 mSv, medical physicists 1.249 mSv, radiographers 1.945 mSv, nurses 2.285 mSv, radiopharmacists 1.938 mSv, and administrative staff 0.961 mSv. Differences in dose values were influenced by the level of interaction with radiation sources and radioactive patients, as well as the type of work performed by each profession. Based on the margin analysis results, which represent the difference between the average maximum and minimum doses for each profession, the obtained value was less than 1. Therefore, the NPD determined for all professions was considered the same, namely 2.285 mSv. Based on the evaluation results, all radiation worker dose values were still below the Dose Limit Value (DLV). This indicates that the implementation of radiation protection and safety in the nuclear medicine unit has been carried out properly. Thus, the implemented dose monitoring system is capable of maintaining workers' radiation exposure within safe limits and supporting occupational safety in the nuclear medicine environment.

Keywords: radiation workers, nuclear medicine, TLD, radiation protection, dose limit value.