Contribution ID: **108** Type: **Poster**

Eye lens dose, seven-year period monitoring results: the Greek experience

Following the recommendation of the International Commission on Radiation Protection (ICRP) and European directive 59/2013 as transposed into the Greek legislation in 2018, the annual dose limit for the lens of the eye was reduced from 150 mSv/year to 20 mSv/year. Moreover, according to the regulations, one of the conditions to consider an exposed worker as Category A is to receive an equivalent dose greater than 15 mSv per year for the lens of the eye.
Meanwhile, the dosimetry department started pilot studies in 2014 to identify exposed workers, mainly in the medical sector, who were liable to receive exposure higher than the level of 15 mSv per year. The distribution of eye lens dosemeters started to be performed in routine basis. During the past 7 years, 170 persons are routine monitored using eye lens dosemeters. The majority, 85% are medical doctors, 9% nursing staff, 5% technicians, and 2% others. Regarding the workplaces 67% of them work in interventional cardiology, 21% in interventional radiology and 12% in radiology, nuclear medicine, and other fluoroscopically guided interventional procedures.
Considering the results of the measurements and in order to assist the authorized parties in the development of the radiation protection programme for the exposed workers, especially with regard to the part of monitoring of the lens of the eye, EEAE has published simple guidelines in the form of a flow chart in order to address the issue of monitoring, the estimation of the equivalent dose and the use of protective shielding.
In the current work, a first analysis of the results for the exposure of the lens of the eye is presented based on the occupational categories. The results helped the regulatory authority address the relevant issues in the published guidelines. An outline of the guidelines is also presented.

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Session Classification: Session 2. Monitoring and dose assessment of occupational radiation exposures

Track Classification: 3. Monitoring and dose assessment of occupational radiation exposures