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## Practical Implications of the New Dose Limit to the Lens of the Eye in inhomogeneous radiation fields

Due to statement and recommendation of ICRP [1], a lower dose limit regarding equivalent dose to the lens of the eye was introduced in both IAEA and EU Basic Safety Standards. The limit was lowered from 150 mSv/year to 20 mSv/year. Considering this new dose limit the Swedish nuclear facilities identified a need to monitor worker's eye lens doses in order to ensure compliance.

Nuclear facilities in Sweden, in cooperation, identified specific work tasks where extra monitoring of the eye was needed. These were situations where the eye is more exposed than the rest of the body due to inhomogeneous radiation fields.

During 2018-19 Forsmark NPP identified several different work tasks and it is an ongoing work and we still monitor several work tasks.

For measurement of equivalent dose to the eye Forsmark NPP uses dosimeters from Public Health England Personal Dosimetry Service (PHE PDS).

The results from 2018 and 2020 [2][3][4] in this study, show that for certain work categories, at boiling water reactors, the equivalent dose to eye lens can exceed the effective whole body dose, measured by passive TL-dosimeter, by up to 50 %. Thus can dose to the eye lens be limiting when ensuring compliance with dose limits. Results for work on Control Rod Drive Mechanisms (CRDM) showed a high tendency for a higher dose to the eye than the effective whole body dose. For other work groups there was little or no difference between the eye dose compared to effective whole body dose. This shows that it is important to continue identifying risk tasks in the facility and investigate different work forces in risk of higher dose to the lens of the eye than the effective whole body dose.

• During 2020 396 measurements equivalent dose to the eye lens, Hp(3) at FKA, [4].

• In total 251 measurements dose  $\ge 0.5$  mSv, [4].

• In total 193 measurements dose showed Hp(3) > Hp(10), [4].

The results indicate that nuclear facilities need to monitor workers, especially itinerant workers. For correct measurements and analysis, it is important to continue to identify risk tasks in the facility, assign dosimeters to the right individuals and make sure workers wear the dosimeter in a correct manner.

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