

“Estimation of the effects of a lead vest on dose reduction for NPP workers using Monte Carlo calculations”

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A report on the effect of wearing a lead vest in exposure dose reduction. The effect of wearing a lead vest by nuclear power station workers in operation was assessed by numerical calculation based on the Monte Carlo Methods.

As a result, a calculation result was obtained that indicates that the wearing of a lead vest reduces the exposure to the organs by nearly 30%. While it showed a high shielding effect in the low energy range (<400 keV), it showed an insufficient shielding effect in the high energy range. Thus, the effect needs to be continuously studied for more details.

Materials & Methods [lead vest]

- Used in KHNP nuclear site since 2004
- Two front sides were folded
- 2.5cm*32cm*1.5mm lead plates were placed
- About 9.3kg



Materials & Methods [Monte Carlo Method]

- AP, PA, RLAT, LLAT
- Parallel photon beam (0.2, 0.4, 0.6, 0.8, 1.0, 1.2MeV)
- MCNP-5 Monte Carlo transport code

