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Effective doses for the employees of a geothermal heating plant.

During the cooling down of brines in deep geothermal facilities scales of $Ba/SrSO_4$, elemental lead and PbS (galena) are formed in the range of tons per year. Whereas the former ones may contain $10 - 500 \text{ Bq g}^{-1}$ ^{226}Ra , ^{228}Ra and ^{228}Th , galenite scales are characterized by specific activities of up to 10^3 Bq g^{-1} ^{210}Pb . During standard operation of a geothermal facility the effective annual dose for the employees was estimated as $1 - 3 \text{ mSv}$, which was dominated by the external γ -radiation. The clearance of materials is possible by deposition together with inactive materials or after verification that the annual effective dose will not exceed 1 mSv for single persons of the population.