Contribution ID: **11** Type: **Lecture**

Estimation of the influence of beaver constructions on environmental contamination in the area of the former Zadní Chodov uranium mine

Hydrothermal-metasomatite uranium deposit Zadní Chodov is situated in metamorphic rocks (gneisses and metagranites) between the villages of Zadní Chodov and Broumov, Czech Republic. The deposit was discovered in 1952 and mined until the year 1992. In the time period 1992-1995 the deposit was flooded in a controlled manner. The change in the oxidation-reduction environment in the underground resulted in high concentrations of U and Ra in the water that rose to the surface. Consequently, mine water had to be cleaned at a treatment plant. The purified water was discharged into a surface stream, which flows through a pond and, after 2 km, joins the Hamerský stream. After the cessation of treatment in 2010, the concentration of radionuclides in surface water and stream sediments began to increase; therefore, in 2012, it was decided to divert part of the overflowing water (1/3) through an experimental wetland. Contamination of water and stream sediments is monitored annually by DIAMO, s. e. as part of the Monitoring Program, approved by SONS; and the impact on the population from this old burden has not been significant so far. In 2023, beavers appeared on the stream, built 25 dams and caused the surrounding pastures to be permanently flooded. Based on the H*(10) measurements carried out in the years 2022, 2023 and 2024, it is possible to evaluate the influence of the flooding on contamination of the area and estimate the impact of higher radionuclide concentrations on grazing beef cattle. Assessing the situation is important to decide if it will be necessary to resume the treatment process.

Primary authors: Mr HÁJEK, Jiří (CTU in Prague); THINOVÁ, Lenka (CTU FNSPE); Mr ČERMÁK, Martin (DIAMO, s. e,); KOTYKOVÁ, Monika (CTU in Prague); Mr BICAN, Radek (DIAMO, s. e,); ŠTĚPÁN, Václav (CTU FNSPE)

Presenter: THINOVÁ, Lenka (CTU FNSPE)