

Survey of radiological contamination and hazardous waste in an old uranium mill

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The Ranstad mill was erected 1962 – 1965 with the purpose to process the uranium bearing alum shales of the nearby Ranstad mine at the mountain Billingen. A total of 200 tons of uranium was produced 1965 – 1969. Due to low uranium prices on the world market, the operation stopped in 1969. There were unrealised plans to restart the production in the 1970s.

The restoration of the uranium mine is completed but the mill has been in a mixture of service operation and decommissioning during the last decades except for parts of the facility where Ranstad Mineral AB has recovered uranium from process wastes from nuclear fuel factories.

Due to authority requirements a plan for decommissioning and clearance of the facility and demolition of some of the buildings was issued in mid 2009 and a radiological survey project was started in the fall the same year.

The aim of this survey was to increase the knowledge about in which buildings radiological contamination and hazardous waste occurs in material and building structure and at which levels. The result of the survey is a base for the decommissioning planning and for discussions with the authorities about clearance of materials and buildings.

The different buildings were classified based on historical operation in each building. The classification was done in three levels (no risk, minor risk and risk) for radiological contamination. The amount of measurements was set based on risk category.

The measurements were made by measuring total activity (fixed and non-fixed activity since no cleaning was done prior to measurements) as well as the non-fixed (loose) activity. Over 250 000 measurement results have been registered, evaluated and presented in different form in phase 1 of the radiological survey. A target for the project has been to have a quality of the measurements and the documentation of the results at a level that they can be re-used in future clearance process.

Finally the result from the mapping was reconnected to the initial risk assessment with the purpose to investigate conformity and to be a platform for the second phase of the radiological survey and for the further decommissioning planning.