DSA Norwegian Radiation and Nuclear Safety Authority

Kinsarvik excursion 2022

The Norwegian Radiation and Nuclear Safety Authority (DSA) and The Geological Survey of Norway (NGU) invite you to enjoy an informative trip to Kinsarvik, a village located by the beautiful Hardanger fjord.

The Kinsarvik excursion will begin after the end of the ROOMS conference on Wednesday 28 September. The journey to Kinsarvik will take approximately 2 and a half hours by bus from Bergen. We will stay at Hotel Ullensvang.

On Thursday 29 September we will spend some time outdoors with scientist and Associate Professor Jan Steinar Rønning from NGU and The Norwegian University of Science and Technology (NTNU). He will tell us about the bedrock geology in Kinsarvik which is the reason behind the very high indoor and outdoor radon concentrations. Information will also be given on the discovery of the high radon concentrations in the area, the kind of measures that have been implemented and how the municipality and the residents have tackled the radon problem. Please find the preliminary program below.

Radon and Geology in Kinsarvik

The radon problem in Kinsarvik in the Ullensvang Municipality in Western Norway, is one of the largest in the world. Annual average indoor radon concentration, as high as 56,000 Bq/m^3 has been measured there. The problem affects more than 100 dwellings, where the average yearly indoor radon level of 4,340 Bq/m^3 has been reported. Indoor radon concentrations vary during the year.

The external landforms and internal structures in the soil deposit are characteristic of a rock avalanche deposit. A preliminary interpretation of LIDAR data indicates a rockslide deposit of ca. 1 mill. m^3.

Airborne and ground gamma-ray spectroscopy show elevated uranium content in the granitic bedrock north and east of Kinsarvik. These uranium bearing rocks are also found in an open pit in the Kinsarvik deposit.

Terrestrial cosmogenic nuclide dating at four surface boulders show an average age of 10900 ± 600 years. This indicates a rockfall immediately after the last deglaciation of Western Norway.

Based on our results, we can conclude that the radon problems in Kinsarvik are caused by a porous coarse grained rockfall deposit that can emanate radon and let the flow with alternating seasonal direction. This rise a new question: **Could there be similar deposits in other areas in Norway, or world-wide, with similar radon problems?**

Jan Steinar Rønning
Geological Survey of Norway

PRELIMINARY PROGRAM

Wednesday 28 September:

1630-1900: Bus trip from Thon Hotel Rosenkrantz, Bergen, to Hotel Ullensvang by the Hardanger fjord.

1930 Three-course dinner at Hotel Ullensvang

Thursday 29 September:

Breakfast at the hotel

0830-0845: Bus to Kinsarvik

0900-1600:

→ Introduction

→ The Ullensvang municipality perspective

→ Mitigation work in Kinsarvik

→ Geological understanding

→ Excursion in the field

Meals are included.

Hopefully we will have beautiful sunny autumn weather, but this is Norway, and you should be prepared for all kind of weather: sun, wind, rain, warm or cold.

Comfortable shoes for hiking in the field are needed.

1600-1830: Bus trip to Bergen

The Kinsarvik excursion is for the ROOMS 2022 participants only and the maximum number of participants is 50.

Registration and payment for the excursion can be made when registering for ROOMS 2022 conference.

For any questions, please contact the Organizing Committee at radon@dsa.no