



The French code of public health defines an annual dose equivalent limit of 1 mSv for members of the public exposed to gamma radiation in their homes or at their workplace.

From 2020 onwards, within the framework of this legislation, certain used in the construction industry will be subjected to a radiological assessment. The end result of this procedure is a factor "I" which represents the level of radiological risk linked to the material in question.

The factor "I" is determined from the individual uranium, thorium and potassium concentrations expressed in Bq/kg as follows:

$$I = \frac{C_{Ra226}}{300} + \frac{C_{Th232}}{200} + \frac{C_{K40}}{3000}$$

The individual concentrations required can be determined in-situ prior to extraction by means of spectral gamma-ray logs run in investigation boreholes traversing the concerned geological formations.

The results above reveal that while the entire interval would be subject to restriction, the uranium-rich surface layers and horizon between 9 m and 10 m depth where the "I" factor enters the red zone would be particularly problematic.



Detector section of the GRS60 spectral gamma probe.



Geophysical logging operations underway on the site under investigation.