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## Safeguards Usability of Monitoring for Safety at the Olkiluoto Repository Site

Monitoring of a geological repository is based on IAEA safety requirements for disposal of radioactive waste. Therefore, at the Olkiluoto repository site, the operator Posiva Oy runs a multidisciplinary monitoring programme targeted at studying environmental impact, improving the understanding of the natural properties of the site, verifying favourable conditions for long-term safety, and developing methods for monitoring the performance of engineered barriers. In this presentation the usability of the data produced by the monitoring programme is assessed for the implementation of nuclear safeguards, primarily to detect the excavation of any undeclared underground premises.

Microseismic monitoring was launched before the beginning of the underground construction at the Olkiluoto repository to locate seismic events in Olkiluoto and surroundings, and the findings are already used in implementing national safeguards. These are also reported by the operator in the updates of the BTCs to the European Commission and further to the IAEA, although there is no safeguards requirement for this kind of monitoring. The geoscientific programme was revised in 2016 for next construction period of the Olkiluoto repository. In the current assessment it is concluded that also automatic hydraulic head measurements in deep drillholes and land use monitoring also produce relevant data for safeguards to conclude on the integrity of the rock formations around the repository as a containment and surveillance measure.

The inclusion of the results of hydraulic head and land use monitoring in the input for the implementation of national and IAEA safeguards, i.e. in the generation findings of the national system, could apparently be achieved by examining material and reports that the operator already delivers for other purposes.

### Which "Key Question" does your Abstract address?

NEW2.4

### Which alternative "Key Question" does your Abstract address? (if any)

NEW2.1

### Topics

NEW2

**Primary author:** Dr OKKO, Olli (STUK)

**Co-authors:** Mr HEIKKINEN, Eero (Pöyry); Dr PENTTI, Elias (Pöyry); Mr MORING, Mikael (STUK); HONKAMA, Tapani (STUK)

**Presenter:** Dr OKKO, Olli (STUK)

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