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JOINT DEVELOPMENT OF PLUGGING AND SEALING TECHNOLOGY FOR GEOLOGICAL DISPOSAL FACILITIES – The DOPAS Project

Launch of European-wide cooperation on plugging and sealing technology

Fourteen nuclear waste management organisations and research institutes from eight European countries are participating in a technology development project for testing plugging and sealing systems for geological disposal facilities for radioactive waste - the DOPAS project ("Full-Scale **D**emonstration **O**f **P**lugs **A**nd **S**eals"). The project is built around a set of full-scale underground demonstrations, laboratory experiments, and performance assessment studies. The project budget is €15.7 million, and is jointly funded by the Euratom's Seventh Framework Programme (€8.7 million) and European nuclear waste management organisations. The project is running in the period September 2012 – August 2016, and is being coordinated by Posiva Oy, a nuclear waste management company in Finland.

The project will compile the design basis of plugs and seals, develop new technology for plug and seal materials and for the assembly and construction of plug and seal systems, carry out full or partial design of the systems, and perform five full-scale plug and seal tests. The tests will be carried out in research facilities representative of varying geological environments in Finland, France, the Czech Republic, Sweden and Germany. In addition, the performance of the plugs and seals will be assessed and compared to design requirements. A further task is to inform the wider radioactive waste management community about the work and results of DOPAS, via attendance at international scientific meetings and project publications. In 2016, the project team will organise an international seminar on plugging and sealing technology for geological disposal of radioactive waste.

The impetus to the cooperation comes from the Strategic Research Agenda of the Implementing Geological Disposal of Radioactive Waste - Technology Platform (IGD-TP).

”As part of the DOPAS project, Posiva will perform the deposition tunnel's full-scale plugging test in the underground rock characterization facility, ONKALO, in Finland," says Posiva's Johanna Hansen, coordinator of the DOPAS project. The plug design has already started, and the construction will be carried out in 2013-2014. Other Finnish project partners are VTT and B+Tech.

"Excavation of the plug area with wire sawing is also a new and innovative task for Posiva as part of the deposition tunnel plug construction test. A low-pH concrete, especially developed for geological disposal conditions, will be used for the plugging structure. The reason for using this type of special concrete is to maintain the chemical conditions of the underground geological environment as natural as possible," says Hansen.

Kommentti [EJOH1]: Posiva specific

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