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A rapid and non-destructive method for determining in-situ Uniaxial Compressive Strength (UCS) of rocks during On-Site Inspections.

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The On-Site Inspection Action Plan (OSI-AP), CTBT/PTS/INF.1343, serves as a tool for furthering OSI capabilities towards the establishment of a balanced, coherent, and robust verification regime at entry into force (EIF) of the CTBT. In furtherance to the objectives of OSI-AP, an experts meeting was held on 7-9 March 2018 to consider issues relating to OSI GVOB and position finding. Petrographic techniques to examine thin sections of rocks during initial inspection period (IIP) was proposed. However, rock sample collection, thin section preparation and petrographic analysis, herein considered a destructive method, was not adopted as an OSI technique. The in-situ Uniaxial Compressive Strength (UCS) test technique was proposed as a viable alternative. UCS is a non-destructive test for rapid assessment of condition of rocks and concrete structures. The tests are easier to undertake because they necessitate less/no sample collection, and thin sections preparation and petrographic analysis. Results of UCS tests during geological and geophysical investigations for dam site in Kenya will be presented during the Science and Technology Conference (SnT2019). The UCS results as well as use of the technique during OSI enable rapid decision making as to the nature and characteristics of in-situ rocks thus allowing investigations/inspections using intrusive techniques.

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