The program of deep continental drilling on Kola became qualitatively a new stage in our knowledge about the Earth crust. The major point of this knowledge became the evidence of deep-seated fluids and fractures in the crust. Geothermal investigations in Kola hole have been combined with a wide range of studies which were carried on in it - hydrogeology, petrology, geochemistry, rock mechanics, and geophysical observations. The report includes new results of hydro-geothermal field in the old crust. The most essential result - detection of link of a thermal field with hydro-physical zonality (from meteoric fresh water to saline metamorphic fluids) and fracturing of the crust. Areal analysis of hydro-geothermal field near Kola has shown its link with stress field, fault tectonics and with lateral inhomogeneity of the upper crustal permeability accordingly. Detailed level-by-level allocation of RAE showed redistribution of U and Th by metamorphic fluids in deep crust. Using dilatancy crustal model approach, analysis of hydro-geothermal, seismic, seismological, geoelectric, density and petrologic models of old crust was carried out. Comparison of P-T conditions on Conrad and Moho has showed their correspondence to stick-slip and dislocation plasticity boundaries accordingly. The range of a bright dilatation for geomaterials coincides with LVZ in Kola section. Including water as geologic factor ensures difference of crustal and mantle rocks, changes dynamics of destruction, and installing units of self-organization during lithosphere evolution. The author expresses gratitude to many colleagues for their participation and the help in carrying out various parts of present study.