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RED-100 at the Kalinin Nuclear Power Plant: first results and plans

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RED-100 is a two-phase emission detector with an active volume containing 130 kg of liquid xenon. The detector was exposed to the antineutrino flux of $1.35 \cdot 10^{13} \text{ cm}^{-2} \text{ s}^{-1}$ at a distance of 19 m from the 3.1 GW reactor core of Unit 4 of the Kalinin Nuclear Power Plant (KNPP). The comparison of count rates measured during the reactor on and off periods shows no statistically significant excess and allows to obtain an upper limit on the cross-section of coherent elastic scattering of antineutrinos on xenon nuclei.

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