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First identification of excited states in ^{114,115}Rh SHAOHUA LIU¹, J.H. HAMILTON, A.V. RAMAYYA, Vanderbilt University, A. GELBERG, Universität zu Köln, Y.X. LUO, J.K. HWANG, Vanderbilt University, J.O. RASMUSSEN, Lawrence Berkeley National Laboratory, S.J. ZHU, Tsinghua University — Excited states in the very neutron-rich nuclei ^{114,115}Rh have been identified for the first time from a study of the prompt γ -rays emitted in the spontaneous fission of ²⁵²Cf with the Gammasphere detector array. Eight levels with twelve transitions in the $\Delta I = 1$ yrast band and five levels with eight transition in a side band in ¹¹⁴Rh are found. The level scheme is proposed to be built on 7^- excited state. The signature inversion of the yrast bands in ^{106,112,114}Rh are observed and the inversion point of ¹¹⁴Rh is determined to be 10.6 \hbar , which is smaller than 12.5 \hbar of ¹¹²Rh and 13.7 \hbar of ¹⁰⁶Rh. Possible explanations will be presented. The level scheme of ¹¹⁵Rh is established by observing eight levels with thirteen transitions in the yrast band and five levels with eight transition in a side band (yrare band). The existence of the large signature splitting and a vrare band in ¹¹⁵Rh shows features which are typical for triaxially deformed nuclei. Calculations based on the rigid-triaxial-rotor- plusquasiparticle model are performed to predict triaxiality with $\gamma = 28^{\circ}$ for ¹¹⁵Rh. The results will be reported.

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