Volume collapse in Ce alloys under pressure by neutron diffraction\textsuperscript{1} JAMES L. SMITH, ANNA LLOBET, SERGEI M. STISHOV\textsuperscript{2}, DARRICK WILLIAMS, JASON C. LASHLEY, Los Alamos National Laboratory — Neutron-diffraction measurements under hydrostatic pressure up to 10 kbar were performed on the Ce\textsubscript{0.9-x}La\textsubscript{x}Th\textsubscript{0.10} system to investigate the tricritical point at $x_c = 0.14$. For $x < x_c$, we observe first-order transitions with a pressure derivative of the transition temperature, $dT/dP = 20$ K/kbar. For $x > x_c$ we observe a continuous transition that is second order, which again demonstrates a tri-critical point in the pressure-temperature phase diagram. The results will be presented and discussed.

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\textsuperscript{2}also at: Institute for High Pressure Physics of Russian Academy of Sciences, Troitsk