Abstract Submitted
for the SHOCK07 Meeting of
The American Physical Society

Study of Phase Transitions in Cerium by Pressure Gauge PVDF[1]

MIKHAIL ZHERNOKLETOV, VLADIMIR SIMAKOV, VALERY BORISSENOK, VIACHESLAV BRAGUNETS, VASILY VOLGIN, RFNC-VNIIEF, FRANK CHERNE, MARVIN ZOCHER, LANL, RFNC-VNIIEF TEAM, LANL TEAM —

This paper examines phase transitions in cerium during shock compression using PVDF gauges. A two-wave structure was observed with loading pressures of 4GPa - 12GPa. The wave structure consists of leading isentropic compression wave followed by a shock wave. This wave structure was formed as a result of the isomorphic $(\gamma - \alpha)$ phase transition. The wave profiles exhibited no peculiarities resulting from the polymorphic transition $(\alpha - \varepsilon)$ as predicted by Elkin et. al [*Proceedings of the International Conference VII Khariton Readings,* Sarov 2005, p. 116].

[1]This work was executed at financial support of LANL.

Mikhail Zhernokletov
RFNC-VNIIEF

Date submitted: 22 Feb 2007 Electronic form version 1.4