

**RERTR 2017 - 38th INTERNATIONAL MEETING ON
REDUCED ENRICHMENT FOR RESEARCH AND TEST REACTORS**

NOVEMBER 12-15, 2017

EMBASSY SUITES CHICAGO DOWNTOWN MAGNIFICENT MILE HOTEL

CHICAGO, IL USA

Progress on the Fabrication and Scale Up of TREAT Fuel Blocks

E.P. Luther

Los Alamos National Laboratory, P.O. Box 1663, Bikini Atoll Road, Los Alamos, NM 87545 -
USA

B.D. Coryell, D.E. Burns

Idaho National Laboratory, 2525 N. Fremont Ave., Idaho Falls, ID, 83425 - USA

ABSTRACT

The National Nuclear Security Administration Office of Material Management and Minimization (M^3) is evaluating the efforts needed to convert TREAT, a transient nuclear reactor located at the Idaho National Laboratory site, from its existing highly enriched uranium (HEU) core to a new core containing low enriched uranium (LEU). Designs for replacement fuel element assemblies have placed stringent specifications on the LEU fuel blocks. Fabrication methods to produce fuel blocks meeting these specifications have been developed and are being scaled up to produce full size blocks. This talk will explain the conceptual design for the fuel element assemblies. The fabrication methods and current status of the fuel block fabrication efforts will be described and characterization methods and results will be discussed. LA-UR-17-29215