RERTR 2018 – 39[™] International Meeting on Reduced Enrichment for Research and Test Reactors

November 4-7, 2018 Sheraton Grand Hotel and Spa Edinburgh, Scotland

Activities in Support of Conversion of the NBSR to LEU Fuel

T. Newton, R. Williams, D. Turkoglu, M. Middleton, and P. Brand NIST Center for Neutron Research 100 Bureau Drive, Mail Stop 6101, Gaithersburg, MD 20899 – USA

> J. Rowe Department of Materials Science and Eng. University of Maryland College Park, MD 20742-2115 – USA

D. Diamond, and L. Cheng Nuclear Science & Technology Department Brookhaven National Laboratory, Upton, NY 11973 – USA

ABSTRACT

The NIST Center for Neutron Research (NCNR) and Brookhaven National Laboratory continue to perform neutronic and thermal-hydraulic analyses for the conversion of the NCNR test reactor, the NBSR, to Monolithic U-Mo LEU fuel. In addition, design and construction of a liquid deuterium cold source to mitigate experiment flux losses due to conversion is progressing, with commissioning of the new 7 kW refrigeration unit completed and fabrication begun on the cold source cryostat. Cold source installation is expected to begin in 2021.