

U.S. Domestic Efforts and Commitments to Convert Remaining Civilian HEU Research Reactors¹

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ABSTRACT

The Reduced Enrichment for Research and Test Reactors (RERTR) program mission supports the minimization and, to the extent possible, elimination of the use of HEU in civilian nuclear applications by working to convert research reactors and radioisotope production processes to the use of LEU fuel and targets throughout the world. In its nearly 28 years of existence, the RERTR program has worked on the conversion of 43 reactors. Under the U.S. Department of Energy's National Nuclear Security Administration (NNSA) Global Threat Reduction Initiative (GTRI), schedules and plans for the conversion of research reactors operating with HEU have been accelerated.

An important element of the RERTR program is the conversion of U.S. domestic reactors. Thus far the U.S. has converted 11 domestic research reactors to LEU fuel and under the recently signed Security and Prosperity Pact with Canada and Mexico, the U.S. committed to the conversion by 2011 of 7 additional research reactors that can convert with existing qualified LEU fuels. Internally, the RERTR program has established the goal of converting these 7 reactors by 2009. The remaining civilian HEU-fueled research reactors in the U.S. are high performance reactors that require high-density LEU fuels to attain their current performance objectives. The RERTR program is working to develop the high-density LEU fuels required to enable the conversion of these research reactors. The plans are for qualifying the high-density LEU fuels in 2010-2011 and completing the conversion of these reactors by 2014. In addition to the development of the high-density LEU fuels, the RERTR program has recently established a high-performance-reactor working group to coordinate the RERTR program fuel development effort with the conversion feasibility and safety studies and fuel requirements. This group is comprised of representatives from each of the following facilities: ATR, HFIR, MITR, MURR, and NBSR.

The presentation summarizes the current RERTR technical activities and planned schedule for the conversion of the remaining U.S. domestic HEU-fueled civilian research reactors to LEU fuel.

¹ The submitted manuscript has been created by the University of Chicago as Operator of Argonne National Laboratory ("Argonne") under Contract No. W-31-109-ENG-38 with the U.S. Department of Energy. The U.S. Government retains for itself, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in said article to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.