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**Impacts of Pacific Northwest National Laboratory R&D in Support of
the USHPRR Fuel Fabrication Pillar**

N.J. Lombardo and V.V. Joshi

National Security Directorate

Pacific Northwest National Laboratory, 902 Battelle Boulevard, Richland, WA 99352 – USA

ABSTRACT

The Pacific Northwest National Laboratory (PNNL) is conducting research and development (R&D) to support the Fuel Fabrication Pillar, a project within the U.S. High Performance Research Reactor Conversion program of the office of NNSA's Material Management and Minimization. The objectives of the R&D include definition of process steps, optimization of existing process steps, development of process specifications and process flow diagrams, and production planning support. The scope of PNNL's research has impacted the fabrication process in numerous ways. The impacts to the fabrication process were a result of a combination of experimental studies, analysis, and an integrated thermomechanical model of the fabrication process from a cast ingot to a fuel plate. This presentation will list the specific fabrication areas impacted by the research and provide specific details on homogenization and hot-rolling.