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**Hot Isostatic Pressing Process Optimization of 6061 Aluminum  
Cladding for U-10Mo Fuel Plates**

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**ABSTRACT**

Under the United States High Performance Research Reactor project managed under the National Nuclear Security Administration's Material Management and Minimization office, Hot Isostatic Pressing (HIP) process optimization studies are being performed to improve fabrication of U-10Mo fuel plates at BWX Technologies. Several important parameters are under investigation including strongback material and thickness on can behavior, the effects of parting agents and their bakeout, and thermal performance of the HIP can (e.g., time lag for heating of interiors of HIP cans and the possible ramifications on bond strength). The can thermal performance will be used to understand the potential differences in HIP thermal cycles, can loadings, and can designs to understand process windows (parameter ranges) and optimize the HIP process design.