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**Assesment of the Methods for Suppresion of Breakaway Swelling  
in U-Mo/Al Dispersion Fuel**

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**ABSTRACT**

Using a recently developed model to predict the kinetics of pore growth in U-Mo/Al dispersion fuel, a parametrical assessment of the performance improvement methods for this fuel was performed. The performance improvement methods considered in this study were: coating of the U-Mo particles to reduce interaction layer growth between the U-Mo and Al, adding silicon in the Al, utilizing larger U-Mo particles, adopting a higher Mo content in the U-Mo, and gamma-phase annealing of the U-Mo particles. The potential advantages of each method were quantified in terms of reduction in porosity by comparing the in-pile data from RERTR miniplates, AFIP-1 full-sized plates, and coated UMo-containing SELENIUM full-sized plates with the hypothetical cases that employed the improvement methods. As a result, the best combination of performance improvement methods is identified.