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**Update on the Progress and Plans for Large-Size Plate Irradiation  
Testing of Monolithic Fuels**

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**ABSTRACT**

The high power research reactor fuel development and qualification program is focused on qualifying a high density uranium-molybdenum alloy monolithic fuel in order to enable conversion of five high-power research reactors in the United States. This fuel form has been irradiated under multiple campaigns in the Advanced Test Reactor and shown favorable behavior in relevant conditions. Following efforts to scale up production methods for this fuel, a series of new irradiation tests will comprise the database for qualification and address data needs for deployment. Among these tests, a group of large-size plate irradiations have been designed or are otherwise planned in order to demonstrate that the data obtained from more-abundant sub-size specimens is relevant at geometries which represents this fuel's end use. The recently-designed full-size plate 1 (FSP-1) irradiation test is described in detail including achievements the prototyping and hydraulic flow testing of its innovative mechanical layout. This paper describes this and other large-size specimen irradiations plans to illustrate how subsequent irradiation tests will ultimately enable conversion of high power research reactors.