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**Near Net Shape Forming of Ceramic Refractory Composite
High Temperature Cartridges by VPS**

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Near-net shape forming of high temperature furnace containment cartridges is being developed using the Vacuum Plasma Spray (VPS) process. The cartridges are thin walled, 0.069 mm (0.027 in.) thick, and have been produced in continuous lengths of 58.4 cm (23in.). VPS has been used to deposit a refractory metal wall structure (i.e., tungsten) and coat the structure both inside and out with a ceramic (i.e., alumina). The ceramic refractory ceramic composite provides environmental protection to the refractory metal structure from both chemical attack (inside) and oxidation (outside). Microstructures have been characterized, and limited material properties will be presented.