

Technology Innovation

Powder Metallurgy Fabrication

Since 2009, EPRI has led development of powder metallurgy (PM) and hot isostatic processing (HIP) methods that allow near-net-shape manufacturing of large and complex power plant components. Advantages include reduced lead times and life-cycle costs, plus the potential for revolutionary in-service performance.

PM/HIP valves made from Type 316L stainless steel and P91 steel powders now are qualified for use in nuclear and fossil plants, respectively, and functionally graded component surfacing is undergoing accelerated development as a breakthrough technology. In collaboration with the U.S. Department of Energy, the first PM-based pressure vessel nozzle is being characterized as a test specimen.

