METHOD FOR HVOF OR LPPS RESTORATION COATING REPAIR

OF A NICKEL-BASE SUPERALLOY ARTICLE

ABSTRACT OF THE DISCLOSURE

A method for repairing a nickel-base superalloy article, such as a gas turbine stationary flowpath shroud (50) having flowpath cooling holes (64) therein that has previously been in service, includes the steps of providing the nickel-base superalloy article that has previously been in service; and applying a restoration to a surface (74) of the article. The restoration is applied by the steps of providing a restoration nickel-base alloy, wherein the restoration nickel-base alloy preferably has no more than about 15 weight percent chromium and no more than about 0.01 percent yttrium, thereafter applying a restoration coating (72) of the restoration nickel-base alloy to the surface (74) of the article by a hyper-velocity oxyfuel metal spray process or a low-pressure plasma spray process, and thereafter heating the article with the restoration coating (72) applied to the surface (74) thereof to a sufficiently high temperature to diffusion bond the restoration coating (72) to the surface (74) of the article. The article is then returned to service.

(FIG. 1)