
Analysis of the stress-strain state effect of the zirconium alloy claddings on the distribution of hydrides

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The purpose of the work is analysis of the influence of the stress distribution in zirconium claddings of dispersion type fuel rods on the orientation of hydrides. It is shown that the circumferential hydrides may be reoriented to the radial hydrides during the cooling process when the tensile stress is greater than a certain threshold stress. The determined threshold value is between 70 and 90 MPa.

Keywords: zirconium-based alloy, hydrides, stress, distribution, orientation, dispersion type fuel rod, cladding.

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