



Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

NSF Channels

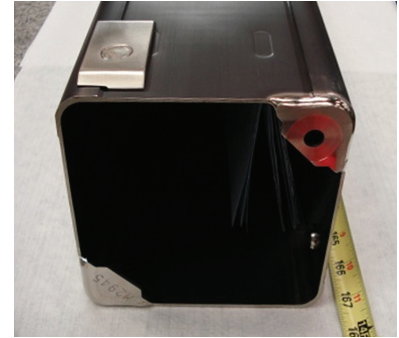
(Niobium, Tin, Iron)

The Light at the End of the Tunnel

BWR Excellence through Innovation

What it is...

NSF is a Zirconium alloy with
1.0% Nb, 1.0% Sn, 0.35% Fe

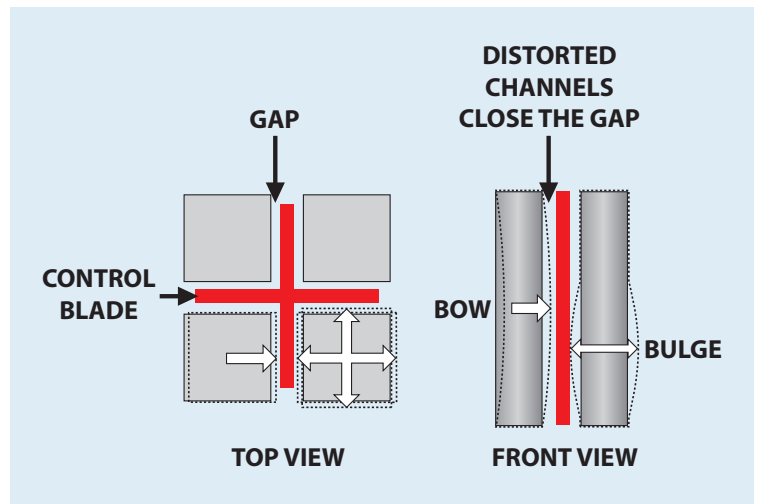


Pre-Oxidized NSF Channel

What it fixes...

NSF is resistant to channel bow that causes channel – control blade interference

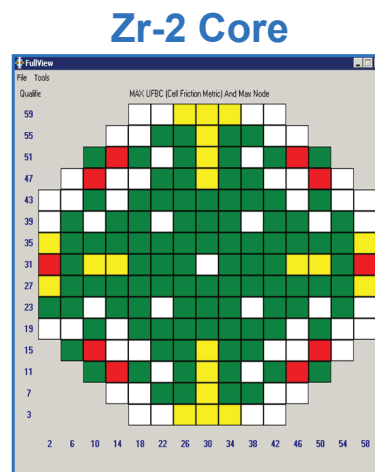
- Fluence gradient-induced bow is low because NSF is resistant to breakaway growth that occurs in Zircaloy
- Shadow Corrosion-Induced Bow is a factor of 5 lower than Zircaloy-2



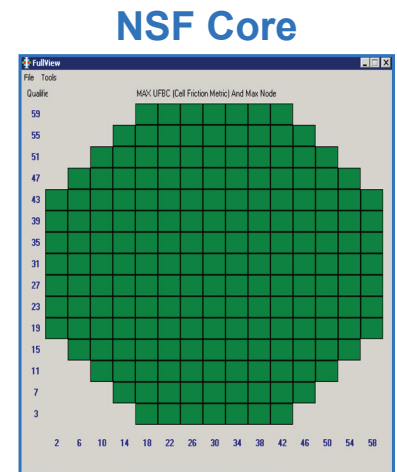
Channel Distortion

What is the Impact...

NSF will significantly decrease the susceptibility of channel - control blade interference and the need for operational testing.



Core with Zircaloy-2
 20 Cells with Interference



Same Core with NSF
 Max CFM decreased by factor of 5



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