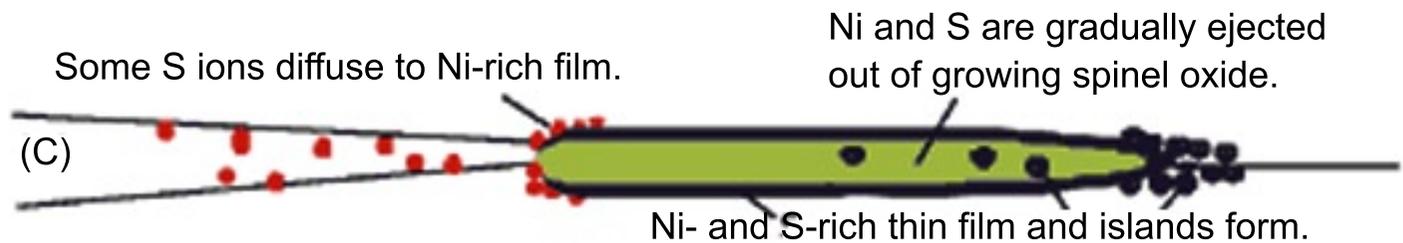
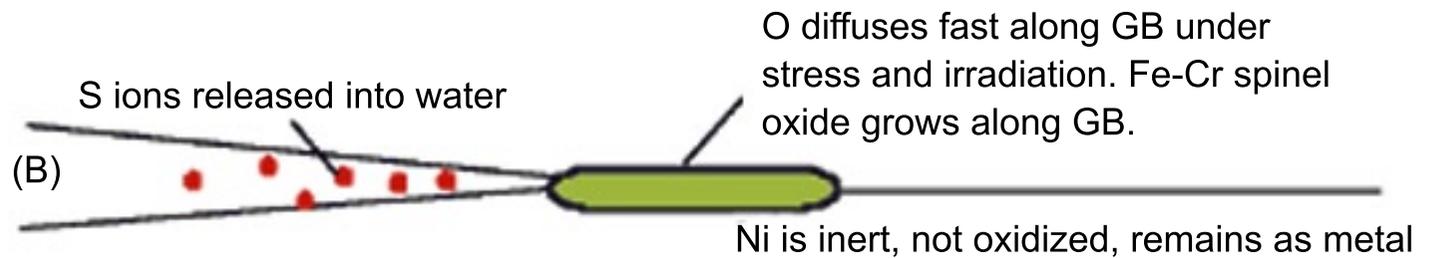
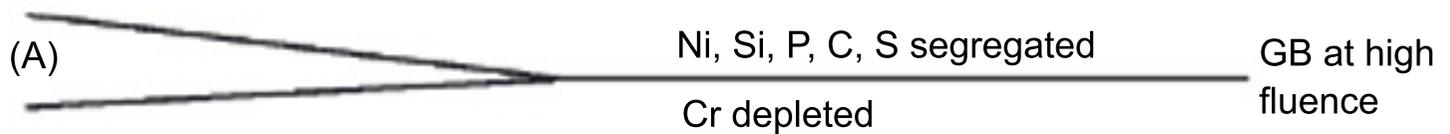
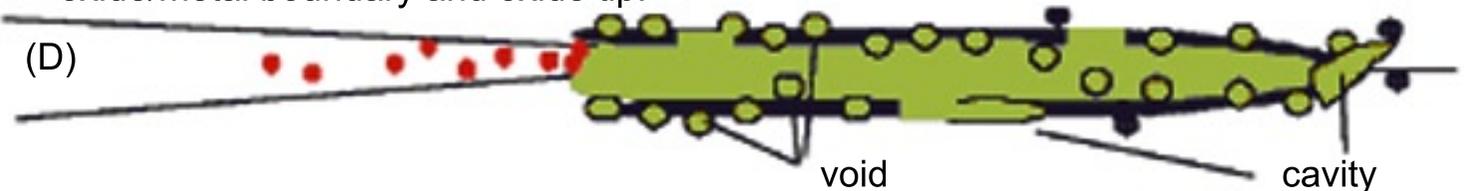


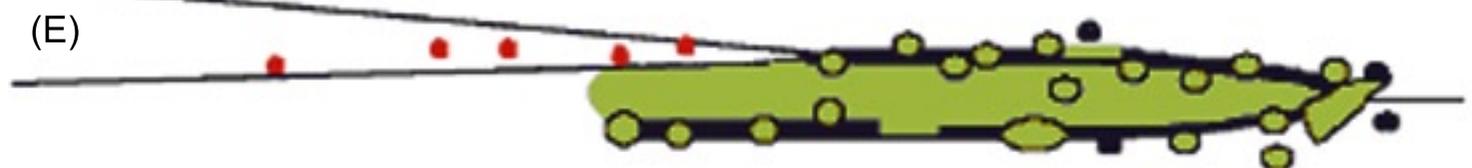
Model of irradiation-assisted SSC in austenitic stainless steels



At high S concentration, S-rich Ni film and islands melt or get amorphized under the influence of irradiation and stress. Voids and cavities form, preferentially near oxide/metal boundary and oxide tip.



When voids, cavities, or amorphized film is in significant amount, the metal/oxide boundary loses strength, breaks, and crack tip advances along the boundary.



(F) When S-rich Ni film and islands are amorphized or melt, Ni-S polyhedral cage is destroyed, S is freed from the cage and diffuses back into metal matrix. Therefore, after discharge from the reactor, S-rich region may or may not be detected depending on the degree of amorphization or melting and service history.