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Update on Post Irradiation Examination Techniques Employed at the Spallation Neutron Source (REMOTE)

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During operation, the mechanical properties of the 316L stainless steel target module at the Spallation Neutron Source (SNS) are altered, and the vessel surfaces are damaged by cavitation-induced erosion. The mechanical properties of other high-dose components, such as the proton beam window, are also affected by radiation during operation, which limit their useful lifetimes. A robust post irradiation examination (PIE) program is maintained at the SNS to inspect and characterize samples from high-dose components after removal from service. Several specialized remote inspection techniques were developed and implemented to perform PIE at the SNS, including: high-resolution photography, remote sampling, tensile testing digital image correlation, remote inspection via videoprobe, and laser line scanning. During this talk a general overview of the SNS PIE program will be presented, including descriptions of PIE characterization techniques and important findings from the SNS targets and PBWs examined to date.

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