

Manufacturability of Neutron Beam Monochromator Drum Shielding

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To obtain the precision required for custom instruments used in neutron facilities, it is necessary to consider materials and components and their effect on tolerances throughout the entire design, manufacturing, and installation process. Designing for manufacturability includes considering and minimizing the number of components in an assembly; the stack-up of tolerances; the effects of temperature, welding, and machining; and the orientation of moving components. Merrick in one of its past projects completed a study and redesign for fabrication of three new neutron beam monochromator drum shields. This project reflects the manufacturability issues that must be considered. This component was encountering problems during manufacturing, and Merrick completed a detailed study to identify ways to consolidate, eliminate and simplify parts in order to lower the assembly stack-up tolerances and streamline assembly operations. This presentation will describe the issues considered in the redesign of the neutron beam monochromator drum shields and the related considerations for achieving manufacturability of similar precision components.

Formal Invitation Letter Required

No

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