

# Neutron Source Manufacturing at SNS

*Wednesday, 6 June 2018 10:20 (40 minutes)*

The Source Development and Engineering (SDE) group at the Spallation Neutron Source (SNS) is responsible for all engineering aspects of neutron source components. This includes research and development, conceptual design, detailed design and analysis, manufacturing, operations support, and post irradiation examination. Within the group, a manufacturing team is dedicated to procuring the specialized source components. These components are primarily Target Modules, Inner Reflector Plugs, and Proton Beam Windows. In all cases, there are an array of specialized manufacturing processes required to complete the components, including electron beam (EB) welding, wire electron discharge machining (EDM), conventional EDM, gun drilling, and complex conventional machining. Experience has proven that these components are too complex for a hands off procurement approach. Therefore, SDE manufacturing team members are integrally involved in the development of the processes and provide extensive oversight and quality assurance through completion. This paper will describe the processes used to by the SDE manufacturing team. It will describe some of the historical challenges that the team has overcome. Finally, it will outline manufacturing plans and changes that are planned in the future.

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**Session Classification:** Session 6-Construction, Fabrication, Inspection, Quality Assurance

**Track Classification:** 6-Construction, Fabrication, Inspection, Quality Assurance