Recent advancements in abrasive technologies have greatly improved productivity in many industries, but these advancements cannot be transferred easily to nuclear shipbuilding due to stringent regulation and control of support material. The use of improved abrasives in Virginia Class Submarine (VCS) construction can result in significant savings associated with decreased labor, improved abrasive life, and reduced fatigue due to less vibration. The objective of this Navy Metalworking Center (NMC) project was to ensure that industry can manufacture abrasives that have improved properties and meet cleanliness and detrimental material requirements associated with nuclear shipbuilding.

Implementation and Technology Transfer:
Implementation will be initiated in calendar year 2014 when EB purchases improved abrasives in support of SSN 786 construction. All baseline abrasives on hand will be consumed prior to full implementation of the advanced abrasives. EB personnel will be trained to recognize which abrasives can be used on nuclear hardware (workpiece) material.

Expected Benefits and Warfighter Impact:
Improved abrasive technologies will allow shipbuilders to remove material faster, with less fatigue and better hygienic conditions. Cost savings are estimated to be $758K per hull, which includes a weighted average derived from improvements on all of the hardware, a 62% improvement in productivity, and an almost four-fold increase in abrasive life. Additional benefits may be realized for overhaul activities.

**TIME LINE / MILESTONE**
Start Date: February 2012
End Date: September 2013

**FUNDING**
Navy ManTech Investment: $633K

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