

Mississippi State University
Notice of Proposed Sole Source Purchase

267-027

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. Commodity or commodities to be purchased (make, model, description):

VRC® Gen IV™ high pressure cold spray system	Cold spray additive manufacturing printer, with 6-axis robot arm, capable of printing complex geometry parts with multiple powder feeders The printer includes: a 21kW Applicator heater (capable of 900C) with integrated cooling; dual powder feeder system for material gradation or sequential feeding; discrete I/O control interface that is directly integrated into ABB robot controller; and an external control interface with datalogging capabilities. The printer is capable of high pressure (1000 PSI) spray applications with process gas flow rate up to 2500 SLM, and carrier gas flow rates up to 250 SLM. Power requirement are 480 VAC, 3 phase, 50A. The printer hardware is enclosed within an acoustical booth.
Robot and fixture table, custom design	Custom integration of ABB 4600 articulated robot, with ABB Omnicore controller, with VRC Gen IV system, inside custom enclosure booth. Custom fixture table for static substrate spray operations.
Wet Dust Collector Filter 1 - Hydrotron	Dust collector with touchscreen control panel and HEPA filter with high temp shutdown. 5,000 CFM and 20HP pump, sludge conveyor, NFPA compliance package.
Custom Enclosure Booth	ACOUSTICAL BOOTH approximately 12' x 10' x 9'h, expertly designed by VRC engineers to be optimized for the customer's facility. Custom safety installation kit designed by a VRC engineer to ensure the safety of personnel working in and around the cold spray booth.

2. Explanation of the need to be fulfilled by this item(s), how is it unique from all other options, and why it is the only one that can meet the specific needs of the department:

VRC Metal System's Gen IV cold spray system is the only commercially available that can perform high pressure/temperature (up to 1000 PSI & 900 C) and low-pressure cold spray, utilizing a dual powder feed system for graded or sequential spray. This cold spray system is unique in that the cold spray applicator is attached to the articulated robot, with a standalone control interface and OPC-UA control and data logging of up to 12 additional I/O points (digital, analog, thermocouple, etc.). Additionally, VRC Metal System's Gen IV is the only commercially available cold spray additive manufacturing system that can be used with any tool pathing software and provide direct access to the robot motion platform, as needed.

3. Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):

The equipment mentioned above is available solely from VRC Metal Systems, and the company sells its equipment directly to customers. There is no separate distribution channel, or value-added resellers, that can provide this equipment. Founded in 2013, VRC Metal Systems is a veteran-owned leader in high-pressure cold spray technology, headquartered in the Black Hills of South Dakota.

4. Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:

The quote provided by VRC is for \$951,755.46. This quote is for a custom solution. We have had extensive conversations with other cold spray OEMs to ensure this cost is reasonable. The cost includes shipping, installation, calibration, site user training, and most ancillary equipment necessary to operate the 3D printing system.

5. Explanation of the efforts taken by the department to determine whether this is the only source and the efforts used to obtain the best possible price:

MSU personnel are experts in metals-based additive manufacturing (AM) as well as have attended many events and conferences related to cold spray technology, therefore they are well aware of all the hardware manufacturers in the industry. As stated in the justification above, there are no other vendors for VRC Metal Systems equipment. Other cold spray manufacturers exist, but the uniqueness of this machine leverages a robotic motion platform

which can be controlled by many different software packages, the features of the Gen IV cold spray applicator, the multiple powder feeder system, and the custom integration within an environmental chamber with acoustical dampening.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Jennifer Mayfield, CPPO

Director of Procurement & Contracts

jmayfield@procurement.msstate.edu

Subject Line must read "Sole Source Objection"

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.