7555-01

NATIONAL SCIENCE FOUNDATION

Notice of Buy American Waiver under the American Recovery and Reinvestment Act of 2009

AGENCY: National Science Foundation (NSF).

ACTION: Notice.

SUMMARY: NSF is hereby granting a limited exemption of section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act), Pub. L. No. 111-5, 123 Stat. 115, 303 (2009), with respect to the purchase of the propulsion shaft bulkhead seals that will be used in the Alaska Region Research Vessel (ARRV). These seals protect the vessel from progressive flooding in the event of an emergency.

DATE: [insert date of publication in the Federal Register].

ADDRESS: National Science Foundation, 4201 Wilson Blvd., Arlington, Virginia 22230.

FOR FURTHER INFORMATION CONTACT: Mr. Jeffrey Leithead, Division of Acquisition and Cooperative Support, 703-292-4595

SUPPLEMENTARY INFORMATION: In accordance with section 1605(c) of the Recovery Act and section 176.80 of Title 2 of the Code of Federal Regulations, the National Science Foundation (NSF) hereby provides notice that on February 15, 2012, the NSF Chief Financial Officer, in accordance with a delegation order from the Director of the agency, granted a limited project exemption of section 1605 of the Recovery Act (Buy American provision) with respect to the propulsion shaft bulkhead seals that will be used in the ARRV. The basis for this exemption is section 1605(b)(2) of the Recovery Act, in that propulsion shaft bulkhead seals of satisfactory quality are not produced in the United States in sufficient and reasonably available commercial quantities. The total cost of the two required propulsion shaft bulkhead seals (~$82,000) represents less than 0.1% of the total $148 million Recovery Act award provided toward construction of the ARRV.

I. BACKGROUND

The Recovery Act appropriated $400 million to NSF for several projects being funded by the Foundation's Major Research Equipment and Facilities Construction (MREFC) account. The ARRV is one of NSF's MREFC projects. Section 1605(a) of the Recovery Act, the Buy American provision, states that none of the funds appropriated by the Act "may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States."

The ARRV has been developed under a cooperative agreement awarded to the University of Alaska, Fairbanks (UAF) that began in 2007. UAF executed the shipyard contract in December 2009 and the project is currently under construction. The purpose of the Recovery Act is to stimulate economic recovery in part by funding current construction projects like the ARRV that are "shovel ready" without requiring projects to revise their standards and specifications, or to restart the bidding process again. Subsections 1605(b) and (c) of the Recovery Act authorize the head of a Federal department or agency to waive the Buy American provision if the head of the agency finds that:

(1) applying the provision would be inconsistent with the public interest; (2) the relevant goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) the inclusion of the goods produced in the United States will increase the cost of the project by more than 25 percent. If the head of the Federal department or agency waives the Buy American provision, then the head of the department or agency is required to publish a detailed justification in the Federal Register. Finally, section 1605(d) of the Recovery Act states that the Buy American provision must be applied in a manner consistent with the United States' obligations under international agreements.

II. FINDING THAT RELEVANT GOODS ARE NOT PRODUCED IN THE UNITED STATES IN SUFFICIENT AND REASONABLY AVAILABLE QUALITY

The ARRV is specifically designed to meet a low underwater radiated noise standard that relates to fish hearing (Specification Section 073.2). This standard is critical to science operations in that if the noise from the vessel is too high, the behavior of the species being studied will be changed, which negatively impacts the population data

being collected. If the vessel does not meet this low underwater radiated noise standard, the science mission requirements will not be met. All modern research vessels are being built with low underwater noise in mind not only because of improved science capabilities but also because of the growing understanding of the negative environmental effects of noise in the water, particularly for marine mammals. One significant path for vessel noise to be transmitted into the water is from rotating or vibrating machinery that is in contact with elements of the ship's structure, such as bulkheads (walls) and decks (floors). The vibration then goes directly into the water from the hull. The way to prevent this is to eliminate direct contact with the ship's structure or lower it to acceptable levels using properly designed vibration mounts made of a flexible material, such as rubber or springs.

The ship's main propulsion shafts, which connect the electric drive motors to the azimuthing thrusters (Z-drive), are a significant source of vibration. The vessel has two main thruster units for speed, ice breaking, and maneuverability, and it therefore has two propulsion shafts. Originally, both the motor and the thruster were in the same compartment. However, the hull had to be

lengthened six feet due to weight, which necessitated the creation of a separate motor room. Because of US Coast Guard requirements to prevent progress flooding between compartments in the event of damage to the hull, all penetrations (including the shaft) require a means to make the opening water tight. Therefore, the technical requirements that were developed by UAF for selecting the propulsion shaft bulkhead seals used in the ARRV include:

1. Certified by the American Bureau of Shipping (ABS)
2. Withstand water pressures when flooding in the hull is over 10 feet deep
3. Sized to properly fit the diameter of the propulsion shaft
4. Accommodate all angular and directional fluctuations of the shaft when rotating
5. Accommodate shaft speeds up to 1079 RPM
6. Suitable for the marine environment (temperatures, contact with sea water, bilge water, etc.)
7. Be split seal/housing type to allow installation and/or removal after shaft installation
8. Be non-contact type under normal operations to prevent shaft vibration from transmitting to the hull

Failure to meet any of these technical requirements would jeopardize safety and operability, and would prevent the vessel from meeting the specified low underwater radiated noise requirements.

The unique aspect of the MIDE Marine propulsion shaft bulkhead seal is its hydrogel embedded foam. This foam enables the seal to not contact the rotating shaft during the majority of its life. When a flooding event occurs, the hydrogel embedded foam uses the water from the flooding to swell and provide a robust and reliable seal against the shaft, protecting the vessel from progressive flooding. Rigorous testing to US Navy standards has demonstrated that the seal can operate for up to 1,000 hours with the seal engaged after a flooding. By not normally contacting the shaft the seal has no wearing components (which means less maintenance and easier installation), and for the ARRV has the added benefit of not transmitting any shaft vibrations to the hull. In an emergency situation, meeting the low underwater radiated noise standards is of no concern. MIDE Marine is a US company based in Massachusetts, but manufactures their product overseas.

The shipyard conducted trade publication and web based searches for bulkhead and shaft seals of all types. A web search generated an initial list of 189 US companies that might manufacture the required seal type. Ultimately, the list was reduced to forty (40) by researching those that had marine applications. A detailed review of the forty (40) remaining companies was conducted and only one company (MIDE Marine) was found to have an ARRV compliant non-contact type propulsion shaft bulkhead seal. Further discussion with MIDE Marine revealed that the seals are manufactured overseas. The shipyard decided to pursue the propulsion shaft bulkhead seal available from MIDE Marine, a US-owned company, as the only supplier whose product meets technical requirements, but this purchase still requires an exemption due to foreign manufacture.

In the absence of a domestic manufacturer that could provide requirements-compliant propulsion shaft bulkhead seals, UAF requested that NSF issue a Section 1605 exemption determination with respect to the purchase of foreign-supplied, requirements-compliant propulsion shaft bulkhead seals, so that the vessel will meet the specific design and technical requirements that, as explained above, are necessary for this vessel to be able to perform its

mission successfully. Furthermore, the shipyard's market research indicated that propulsion shaft bulkhead seals compliant with the ARRV's technical specifications and requirements are commercially available from a US company within their standard product line, but are manufactured overseas, which necessitates an exemption.

NSF's Division of Acquisition and Cooperative Support (DACS) and other NSF program staff reviewed the UAF exemption request submittal, found that it was complete, and determined that sufficient technical information was provided in order for NSF to evaluate the exemption request and to conclude that an exemption is needed and should be granted.

III. EXEMPTION

On February 15, 2012, based on the finding that no domestically produced propulsion shaft bulkhead seals meet all of the ARRV's technical specifications and requirements and pursuant to section 1605(b), the NSF Chief Financial Officer, in accordance with a delegation order from the Director of the agency signed on May 27, 2010, granted a limited project exemption of the Recovery Act's Buy

American requirements with respect to the procurement of propulsion shaft bulkhead seals.

Dated: February 17, 2012

Lawrence Rudolph,

General Counsel.

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