JUSTIFICATION FOR SOLE SOURCE (SAP <$150k)
Ref: FAR 13.106 and NAVSUP 4200.85D Chapter 5 Para. 2.b.(5)

The service or material listed on (Document number) 6198V503 6198V504 is sole source and competition must be restricted to one source, or to only one brand name for reasons indicated below. There are no substitutes available for this material.

Restricted to the following source or brand name. Provide **original manufacturer's** name. (If a sole source manufacturer distributes via dealers, **ALSO** provide dealer information.)

Manufacturer: Canberra Industries
Manufacturer POC & Phone Nr. Jeffrey Raimondi 1-800-243-3955
Mfr. Address 800 Research Parkway, CT 06450
Manufacturers Dealer/Rep N/A
Dealer/Rep Address/Phone Number N/A

Description of the item or service required, the estimated cost, and required delivery date.

Purchase a High Purity Germanium (HPGE) Detector Model GC9021 including cables, cold finger extension, Cryocycle II, and a ISOCS/LabSOCS characterization with characterization check source. The estimated cost is [redacted] (b)(5) and the delivery date would be approximately 12/2/16.

Specific characteristics of the material or service that limit the availability to a sole source or particular brand name (unique features, function of the item, etc.). Describe in detail **why** only this suggested source can furnish the requirements to the exclusion of other sources.

The HPGE detector is a direct replacement (backup) for existing Canberra detectors that require maintenance and the requested ISOCS/LabSOCS characterization is a proprietary service performed on the HPGE detector by Canberra. The ISOCS/LabSOCS characterization is a process the vendor performs to model the HPGE detector via Monte Carlo MCF that allows the detector to accurately count samples in containers without a calibrated source. This is required in order to use the LabSOCS software which is an overlay of Canberra Industries' Genie 2000 and is the only gamma spectroscopy software approved in the Department of Navy Application and Database Management System (DADMS). DADMS is a list of all NAVSEA approved software and the software must be on the list to use on a DON computer. The LabSOCS software is used for performing calibrations of various sample geometries without requiring a source. It is used on all current counting systems. All current detectors at PSNS-Det Yokosuka used for sample counting have been ISOCS/LabSOCS characterized. The ISOCS/LabSOCS characterization is proprietary and only Canberra Industries can perform it. If the new detector did not have the ISOCS/LabSOCS characterization, it could not be used to count samples in containers without a calibration source (including the 1500 ml marinelli which is required for emergency response) thereby limiting its current use. Additionally, the Cryocycle II is important because the HPGE detector only operates at Liquid Nitrogen (LN2) temperatures. The Cryocycle II is a dewar that holds LN2 but it also recycles LN2 that has boiled off and returns it back to liquid form. This minimizes losses and allows the system to operate 12-24 months without recharging with LN2. If a standard dewar is used, it has to be filled once or twice a week due to boil off of the LN2. Only the Canberra Cryocycle allows "cold" swapping of the detectors without damaging the unit (damages o-rings). Cold swapping is necessary in Japan to eliminate down time of the system to around 12 hours instead of 3-4 days while the LN2 evaporates and the whole system warms up before we can remove the detector for repairs.

The requested material or service represents the minimum requirements of the government

CHECK & FILL IN ALL APPLICABLE BLANKS BELOW

X The material/service must be compatible in all aspects (form, fit and function) with existing systems presently installed. Describe the equipment you have **now** and **how** the new item/service must coordinate, connect, or interface with the existing system.

The new HPGE detector with its ISOCS/LabSOCS characterization would be used as a backup to the current HPGE detectors in Japan. These detectors are used in the gamma spectroscopy system that counts samples for radioactivity located at U.S. Naval Activities Yokosuka using Genie 2000 and PROcount 2000. Only detectors with the ISOCS/LabSOCS characterization can be used in conjunction with Genie 2000/PROcount 2000 when using the LabSOCS calibration software. Only Canberra can perform the ISOCS/LabSOCS characterization and only with a detector that is at their factory. All other detectors must be sent to Canberra after manufacturing for an additional 1-2 months to perform the characterization and this does

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not include the time and costs of another contract which can take 3-5 additional months because a source is included with the characterization. The ISOCS/LabSOCS characterization on the detector is required to work with the spectroscopy system because it is necessary to have the ability to count samples in geometries which do not have calibration sources (e.g. 1500 ml marinelli). Since the lab in Japan does not have calibration source in this other geometry, only the ISOCS/LabSOCS characterization from Canberra will allow the shipyard to perform an efficiency calibration where a source does not exist (in order to count samples in other geometries) using the existing LabSOCS and Genie 2000 software which are the only DADMS approved gamma spectroscopy software. The new detector will be used to analyze samples for radioactivity including Ship's Force mandatory water samples and will use the new Cryocycle II to maintain cooling. The Cryocycle II is a backup for the current Cryocylce IIs and it allows us to changeout damaged detectors that are at liquid nitrogen temperatures without potentially damaging the Cryocycle II (other similar system use o-rings which will be damaged is the detector is cold when removed). The new detector will be used as a backup for a detector that currently is being used in the existing counting system. When the other detector needs repair, this new detector will then replace the bad detector in a one for one swap. If a detector from a different company is used, it will not be characterized which limits its uses and it cannot be used with the LabSOCS software which requires a detector to be characterized. Also, other detectors have a different sensor for determining if detector is cold which requires an adapter.

X A patent, copyright, or proprietary data limits competition. The proprietary data is: The proprietary data is the ISOCS/LabSOCS characterization which can only be performed by Canberra Industries and is required for using LabSOCS.

__ Provides "direct replacements" parts/components.

X Other information to support a sole-source buy: Canberra Industries is the OEM for the ISOCS/LabSOCS characterization which can only be done at the factory.

I CERTIFY THAT STATEMENTS CHECKED, AND INFORMATION PROVIDED ABOVE, ARE COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND DO NOT CONTAIN CLASSIFIED INFORMATION. I UNDERSTAND THAT THE PROCESSING OF THIS SOLE-SOURCE JUSTIFICATION PRECLUDES THE USE OF FULL AND OPEN COMPETITION.

(b) (6)

Signature [redacted] **Activity** Code 105.52

Title Health Physicist **Date** 7/14/2016

(b) (6)

Contracting Officer Signa [redacted] **Date** 22Aug16

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