



Justification and Approval (J&A) for Other Than Full and Open Competition

NOTE: If a Justification and Approval was approved for the preceding acquisition, a copy of the approved J&A for the predecessor action must be included in the staff package for approval of the instant J&A. This applies to J&A staff packages that are submitted for review and approval at a level above the contracting officer. The predecessor J&A will be used as a reference document by the approving official.

Is this a new or amended J&A Document? [X] New [] Amended (Prior to Award Only!)
Is this a Bridge Action as defined in the AF Bridge Action Reduction Plan? [] Yes [X] No
Funding level for this acquisition: [] <= \$700K [] > \$700K and <= \$13.5M [] > \$13.5M and <= \$93M [] > \$93M
Contracting Activity: Air Force Installation Contracting Center (AFICC)
Purchase Request / Local ID Number: TBD
Program / Project (and PE, if applicable): HVAC Chiller Replacement Standardization
Program Type (PEO or Other Contracting): Other Contracting - Air Force Category Management of Cat 4#, Facilities and Construction
Authority: 6.302-1 - 10 USC 2304(c)(1), Only One Responsible Source and No Other Supplies or Services Will Satisfy Agency Requirements
Estimated Contract Cost (including options): [Redacted] J&A Type: [] Class [] Individual

COORDINATION (AFFARS 5306.304(a))

Table with 3 columns: Date, Project Lead/Program Mgr/Requiring Activity, Signature. Contains 6 rows of coordination signatures from various officials including Elizabeth Harwood, Julian S. Kaelin, Michaelisa Tomasic-Lander, Robert A. Hixenbaugh, Renee M. Richardson, and Terry G. Edwards.

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Date 19 Jul 19	SCOTT A. KISER, SES, DAF Associate Deputy Secretary (Contracting) Assistant Secretary of the Air Force (Acquisition, Technology, & Logistics)	Signature KISER.SCOTT.A LAN.1103048857 <small>Digitally signed by KISER.SCOTT.ALAN.1103048857 Date: 2019.07.19 16:29:51 -04'00'</small>
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APPROVAL ([AFFARS 5306.304\(a\)](#))

Date	William B. Roper, Jr. Assistant Secretary of the Air Force (Acquisition, Technology & Logistics)	Signature  7 Aug 2019
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I. Contracting Activity.

Department of the Air Force, Air Force Installation Contracting Center, 771 Enterprise Sourcing Squadron, 1940 Allbrook Dr., Fairborn, OH 45433

II. Nature and/or description of the action being processed.

The United States Air Force (USAF) has a brand name requirement to procure Heating, Ventilation, & Air Conditioning (HVAC) chillers from a limited selection of manufacturers (see attached addendum titled: Addendum_Base-MFG'R Selection List) to support new chiller purchases for the remainder of this Fiscal Year (FY) through 30 Sep 2024. This Class J&A will support multiple contracts (new) throughout USAF both CONUS and OCONUS locations.

III. Description of supplies/services required to meet agency needs.

This Class J&A covers all USAF HVAC chiller purchases from the effective date of this Class J&A through 30 Sep 2024. Chiller purchases during the next 5 years are expected to number 1,976 units (the number of units expected to reach the end of life cycle). The total spend necessary for replacement of these units has been estimated at \$370M. Approval of this Class J&A will reduce the total cost of ownership to the Air Force by eliminating inefficiencies and duplication in cost by reducing the need to train USAF HVAC maintainers on multiple manufacturers' systems, eventually reducing the cost of training by an estimated \$6.2M per 5 year training cycle. Standardization under this class J&A also allows, over time, HVAC Chiller repair to be done in-house as the primary option versus contracting out these services, resulting in further savings to the Air Force of approximately \$53.4M for every 5 year training cycle. Approval will also increase mission performance efficiencies by streamlining and specializing Civil Engineering (CE) maintainer's schoolhouse training, increasing expertise of organic maintainers thereby reducing downtime of chillers for repair and replacement due to increasing expertise of organic maintainers. The increased availability of trained maintainers also improves the sustainment of the Air Force's equipment, machinery, and communications systems. Approval will also increase process efficiencies by allowing CE pre-planning for building design, will improve lifecycle maintenance and replacement of expensive and critical equipment, and will leverage spending on spare parts inventory.

IV. Statutory authority permitting other than full and open competition.

The Competition in Contracting Act (CICA) at 10 U.S.C. 2304(c)(1), as implemented by FAR 6.302-1(a)(2) and required by FAR 6.303-2(b)(4), states when supplies or services required by the agency are available from a limited number of responsible sources and no other type of supplies or services will satisfy agency requirements, full and open competition need not be provided for.

V. Demonstration that the contractor's unique qualifications or nature of the acquisition requires the use of the authority cited above (applicability of authority).

The Air Force is required to use the "brand name exception" to CICA because the nature of the acquisition as a strategic vehicle for Category Management (CM) requires a pre-planned brand name approach to acquiring HVAC chillers. This brand name acquisition is integral to generate significant estimated cost savings in training expenses and efficiency improvements in mission performance not otherwise available under full and open competition.

The training costs of Air Force maintenance personnel would be greatly reduced under the standardization of HVAC Chillers mentioned in paragraph II. There are two aspects of training for Air Force maintenance personnel. Similar to other Air Force assets, additional training beyond initial skills training is required to maintain proficiency in the system's maintenance. Initial training for Air Force personnel maintaining HVAC systems is conducted at Sheppard AFB (the "school house") and includes basic instruction on Chillers for common maintenance and operations across the inventory of Air Force chillers. However, there is no detailed instruction on fault diagnosis and repair because the Air Force inventory of chillers has 142 different manufacturers, the unique difference in the manufacturers' processes cannot be trained to



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ensure trainees master all manufacturers. Therefore Air Force personnel require additional training at the maintainer's duty location on base-specific manufactures' chillers. At every Air Force base, there are between 1 and 19 number of unique manufactures' chillers, requiring the local training to stretch across all different types of chillers. The Air Force Civil Engineering Center (AFCEC) Force Development Manager for HVAC reviewed the Career Field Education and Training Plan (CFETP) to capture the costs for minimal training to operate and maintain multiple systems. Of the 20 HVAC chiller-related tasks on the CFETP, 13 tasks would have to be re-learned or accomplished with each new manufacturer bought and installed. Thus, 65% of the baseline training costs is repeated at the duty station for each new manufacturer installed at a base. This level of effort is not practical, and cannot occur while still meeting the basic mission needs. The result is an under-trained workforce burdened to train-as-you go, which ends in failed attempts to maintain and repair critical equipment.

Additional training must also be provided above the CFETP to ensure advanced troubleshooting and repair of specific systems. Advanced training requires the manufacturer to be involved in order to certify that the maintainer can use proprietary systems for fault diagnosis, or have access to proprietary code for digital faults. The cost of this training is high and is specific to each manufacturer. Currently, the Air Force funds this training for only the top manufacturer used at the base, and any repairs required on other complex systems are contracted out.

The training is currently conducted by the manufacturers at their location resulting in Temporary Duty (TDY) costs for all maintainers requiring training. Each manufacturer has five courses that must all be completed to be fully trained. The majority of installations, 96%, have more than one chiller manufacturer represented, with a mean value of seven, and a maximum of 19. This represents a significant duplication of training costs and time in having maintainers obtain required training from each manufacturer.

Manufacturer-specific training for CFETP requirement 13.18.2.2 (Chillers) has been priced in the Category Intelligence Report (CIR) from actual expenses, for Trane and Carrier systems. The total cost for training two of the Air Force's main OEMs Chiller's range from \$7,525 to \$9,300 per person. Additionally, the full price, including TDY costs, the cost for the same Chillers range from \$18,525 to \$20,300 per person, or an average cost of \$19,413. In order to meet the Air Force standard of competency for chiller maintainers, the total cost for manufacturer training for 3,006 maintainers for just one manufacturer system, inclusive of TDY costs, is \$58,355,478 in a five-year training cycle.

The most savings would result by the Air Force establishing local specialized training, once the installation's standardized Chiller manufacturer is designated. Through standardization and on-site organic advanced training, the cost is estimated to reduce to approximately \$5M to train all 3006 maintainers on a single manufacturer's system in-house. Alternatively, even if the Air Force paid full vendor prices and were trained at the bases instead of sending maintainers TDY that cost drops down to \$25.3M. Any mix of training reform aided by standardization results in tens of millions in cost reductions.

The Category Management process identified the Air Force did not have an established TCO model for Chillers. The CIR team sponsored a master's student at the Air Force Institute of Technology (AFIT) to develop a Total Cost of Ownership (TCO) model template for HVAC systems that includes sustainment costs. A major finding of this thesis is the enterprise lacks data to properly complete a TCO model. Therefore, the model was used for this effort was derived from existing operations and maintenance and contract spending data associated with HVAC. The TCO model provides USAF acquisition, contracting, and civil engineering professionals a tool with which to project life-cycle costs, negotiate prices, and justify spending decisions. Furthermore, the model provides a proof of concept to the CE enterprise that will allow for the expansion of TCO modeling to other categories of spending. Based on the AFIT thesis, the CIR team is investigating TCO data improvement initiatives and also investigating simulation as a means to generate enough TCO modeling to support purchasing decision scenarios. For example, decisions that incorporate controls cyber security, energy consumption, and mean time between failure considerations.

Implementation of this Class J&A will (1) facilitate to standardize the USAF on a very limited number of chiller manufacturers which reduces training costs by an estimated \$6.2M per 5 year training cycle and increases mission performance efficiencies, (2) will ensure training will be more defined, (3) will increase the responsiveness and effectiveness of in-house maintainers resulting in fewer and shorter downtimes for building HVAC systems, and (4) will lead to a more cost effective delivery of mission capability by ensuring Air Force maintainers are fully trained. Therefore, award to any other sources than those specified brand names for specified Air Force bases would result in continued substantial duplication of cost and lowered mission performance to the Government that is not expected to be recovered through competition. Finally, approval will generate demand efficiencies by reducing the equipment and parts inventories



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for CE and the personnel required to sustain them.

VI. Description of efforts made to ensure that offers are solicited from as many potential sources as practicable.

IAW FAR 5.201 a Notice of Proposed Contract Action/Special Notice, 238220, HVAC Chillers, was posted on FedBizOpps (FBO) 15 March 2019; the posting remained open for 15 days.

A brief description of the requirement was included in the FBO notice. The notice advised that any interested responsible party that believed it was equally or otherwise uniquely capable of meeting the requirements should submit a capability statement. The notice also stated that supporting evidence must be furnished in sufficient detail to not only demonstrate the ability to fulfill the requirement but also demonstrate that competition would be advantageous to the government and would not create a break in service or degradation of performance quality. Two sources expressed interest in the published Special Notice/Synopsis that was posted on FBO, neither of the sources were chiller manufacturers.

In addition, a survey was conducted in March 2018 in preparation of the creation of the CIR. The Air Forces current main Original Equipment Manufacturer (OEM) companies were contacted, including Trane, Carrier, the York brand of Johnson Controls, and McQuay Chillers of Daikin Applied. These manufacturers account for 88% of the chillers installed on USAF Bases. The manufacturers, with the exception of Trane who did not respond, provided summary descriptions of their product lines supporting the general idea that all of them have capability to meet the USAF requirements and support standardization efforts. The responses also supported the idea of competition among the manufacturers being maintained at the distributor level, where possible small business awards can be made. The cost and efficiency benefits to the Air Force through standardization and interoperability, with sunk costs of existing and highly reliable infrastructure, greatly outweighs the expected benefits of competition of differing OEM brands.

Ultimately, full and open competition is what led the Air Force to the current state of costly training but still less than fully trained maintainers, multiple systems per base requiring contracting out advanced repairs, and preventing the efficiencies of less system down-time. The Air Force owns and operates large infrastructure systems, however installing disparate systems has led to a lack of operations and maintenance proficiency. The market research and the subject matter expert analysis captured in the CIR documents that training effectiveness and system knowledge diminish as manufacturer diversity increased, with both chillers and control systems. Inversely, costs to train go up to pay for diverse training programs over all the systems. Lack of expertise with complexity across multiple chiller systems coming from a multitude of vendors all lead to gaps in training, and inability to operate and maintain systems effectively. Finally, the CE schoolhouse training dollars as well as local base O&M funds for training are not being effectively applied when the result is less than a fully qualified organic maintenance function. AFCEC has documented that the limited funds for training do not now meet the standards to have at least two fully qualified maintainers per HVAC chiller system at each location. The efficiencies gained by standardization on selected brand name systems per base will allow the saved O&M funds to be applied to unmet training needs.

VII. Determination by the Contracting Officer that the anticipated cost to the Government will be fair and reasonable.

Contracting Activities will be required to make an individual determination of price fair and reasonableness IAW FAR 13.106-3(a) (simplified acquisitions) or FAR 15.403-3(c)(1) (commercial acquisitions) prior to award. AFCEC and local bases have a large data base of historical prices based on competitive acquisitions, which should be used for comparisons and the government's estimate. While there would not be competition among manufacturers for a local base buy of the assigned name brand HVAC chiller under this J&A, most decentralized purchases will include installation and minimal training when needed. These costs will be competed, most likely among small business installers.

The future of the Category Management direction for HVAC chillers may include AFICC-level negotiations directly with the manufacturers for best customer pricing. This will be an opportunity for a strategic agreement between the government and the manufacturers identified on the attached addendum list. At this time the Air Force CE community needs the



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immediate J&A authority to limit acquisitions to assigned brand name chillers because it is estimated that approximately \$180M of the estimated \$370M in chillers over the next five years have either reached or will reach their remaining service life this fiscal year. Procuring under this class J&A will replace the anticipated repeated requests from local contracting units for brand name J&As to ensure equipment interoperability which were not consistently processed and approved and often stalled procurements by roughly 12 weeks on average. Under this class J&A, contracting units will not process separate J&As, creating more agile acquisition cycles, as well as cost savings in demand and process.

VIII. Description of the market research conducted and the results, or a statement of the reasons market research was not conducted.

A joint CIR between Air Force Installation and Mission Support (AFIMSC), AFCEC, and AFICC was accomplished to gain practical knowledge and experience in how the Air Force manages HVAC systems as well as current market and industry trends and practices. Supporting facts in this Class J&A were drawn from this CIR, which documents historical and future HVAC Chiller long-term and in-depth spend and trend analysis. Input was gathered from AFCEC subject-matter experts, market analysis, and gap analysis.

IX. Any other facts supporting the use of Other Than Full and Open Competition.

In order to increase mission performance, costs savings, and innovation in business methods, HVAC chiller standardization supports the National Defense Strategy objective to innovate business decisions for saving taxpayer dollars. In order to implement this acquisition strategy, the Air Force must pre-plan the brand name HVAC chillers per installation.

X. List of any sources that expressed, in writing, an interest in the acquisition.

This class J&A does not have a specific acquisition attached to this request. Sources that expressed interest in this effort are as follows: Carrier, the York Brand of Johnson Controls, McQuay Chillers of Daikin Applied, Matthis Construction Company, and US Comfort Building Services Inc. The underlying analysis of the need for standardization accounted for as many different manufacturer's brands as would be practical to achieve the maximum amount of savings and efficiencies. An "or equal" manufacturer to those who are represented in the attached addendum is an oxymoron in that other brands may be able to heat and cool equally. However, those "or equals" could not produce the savings and efficiencies determined by the extensive business analysis found in the CIR because they could not provide the standardized training on proprietary information and designs, and could change the fact that multiple manufacturers would still be procured using the status quo procedures. The efficiencies of maintaining a limited number of HVAC chiller brands over time could not be achieved.

XI. A statement of the actions, if any, the agency may take to remove or overcome any barriers to competition before making subsequent acquisitions for the supplies or services required.

The only barriers to competition under this class J&A have been generated by historical purchases. This class J&A action only recognizes that past competitive awards have established the number and mix of HVAC chillers on each base. The Category Management analysis and action only recognizes these facts and maximizes savings and efficiencies based on what the Air Force has in its current inventory across the enterprise and at local levels. The Air Force will continue to perform data driven analysis over time to look for market changes that may increase competition amongst HVAC chiller manufacturers. Additionally, as standard industry practice involves manufacturers, selling through vendors, competition will be maintained at the Dealer/ Distributor level. As noted earlier, the Air Force may pursue negotiations for best customer pricing directly with selected brand name manufacturers to pre-price the chillers.

XII. Certification by the Contracting Officer.

The Contracting Officer's signature on the Justification and Approval Document provides evidence that he has determined



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this document to be both accurate and complete to the best of his knowledge and belief (FAR 6.303-2(b)(12)).

XIII. Certification by the technical/requirements personnel.

As evidenced by their signatures on the Justification and Approval Document, the technical and/or requirements personnel have certified that any supporting data contained herein, which is their responsibility, is both accurate and complete (FAR 6.303-2(c)).