

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

Solicitation No.: R16PS00868

Project Name: PRV Modernization, Conversion and Overhaul of Pressure Regulating Valves, Hoover Dam, A2, A4, and A7

In accordance with FAR 6.302, the proposed contractual action is pursuant to the statutory authority of 41 U.S.C. 253(c)(1).

1. Agency and Contracting Activity.

- a. Agency – Bureau of Reclamation
- b. Lower Colorado Region, Acquisition and Assistance Management Office

2. Nature/Description of Action.

As required by Federal Acquisition Regulation 6.303-2, this Justification for Other Than Full and Open Competition (JOTFOC) is prepared to document the facts and rationale justifying the authority cited in Paragraph 4 to negotiate with a sole source offeror for the above requirement. This JOTFOC follows the format and contains all the information required under FAR 6.303-2. There are seventeen Pressure Relief/Regulating Valves (PRVs) at Hoover Dam. The objective of this procurement is to complete modernization and overhaul of the three remaining PRVs. Modernized PRVs operate with a hydraulic system controlled by a programmable logic controller (PLC). The PLC monitors the status of the generator through the Unit Control Modernization (UCM). The hydraulic fluid is routed by way of a distributing valve that is controlled by the PLC. The modernization of Hoover Dam's PRVs requires the digital controls and hydraulic fluid valves be standardized.

A firm-fixed price contract will be awarded. Funds in the amount of \$7,000,000 are currently available to fund this project. This is a replacement item under Hoover Dam's 10-year plan.

3. Description of Supplies/Services.

There are seventeen PRVs at Hoover Dam. Fourteen PRVs have been overhauled/modernized by the end of fiscal year FY16. Hoover Dam has received additional funding to begin final modernization of PRV Units A2/A4/A7; these are the three remaining PRVs that have to be modernized. The estimated value of the work under this

procurement is \$7,000,000. The period of performance is 1,000 calendar days after award of the contract.

Background:

During the 1930's through the 1950's, various contractors designed and manufactured pressure-regulating valves (PRVs) as part of the seventeen generating units at Hoover Dam, located near Boulder City, Nevada. The various contractors all installed their own designs. For example, Pelton designed and manufactured the PRV on Unit A2, while Allis Chalmers manufactured the PRV on Units A4 and A7.

Under Contract No. 07CP308064 (which was awarded by the Bureau of Reclamation (BOR)), programmable logical controllers (PLCs) were installed on the generating units. These new PLCs made it possible to control a modern hydraulic system on the PRVs using digital signals instead of mechanical linkage.

Contract No. R06PC30062 (which was awarded by the BOR) was awarded to Precision Machine and Supply Inc., Lewiston ID (Precision Machine). The contractor was required to disassemble, remove, rebuild, and re-install PRVs (this entire process is called an overhaul) for various units at Hoover Dam. Hoover Dam identifies the components of the PRVs as either above or below the water. The goal of this contract was to return the 70-year old PRVs to "like-new" condition, both above and below the water. The principle components of this work included: (1) Repair or replace damaged surfaces; (2) Repair or replace check and flow control valves; (3) Surface coating; and (4) Test operations.

In order to improve safety and reliability of the PRV equipment, Hoover Dam began modernizing PRVs in 2007 (under Contract No. R06PC30062), in order to standardize the components and operation so that they are identical. The modernization required the following:

- (1) Changing the control of the PRV from mechanical to digital;
- (2) Replacing the components operated by lake water and the mechanical linkages to the turbine with oil-hydraulic systems and digital hydraulic drives; and
- (3) Linking computer intelligence electronically from the UCM PLCs to the pressure regulating valves' controls to operate the modernized PRV.

The work below the water was unchanged, but the contractor added the following work:

- (1) Design, build, and install a new headcover, oil-hydraulic cylinder, and stop tower;

- (2) Design, build, and install a PLC control system to operate the PRV that communicates with the Hoover Plant UCM control system;
- (3) Design, manufacture, and install a control manifold to properly distribute the oil for moving the cylinder; and
- (4) Design, manufacture, and install a hydraulic oil pressure system and piping (HPU). Components included the following: 7.5HP motor, oil pump, reservoir, accumulator to supply stored energy to the oil system, hydraulic pump, pressure switch, solenoid valves, piping, motor starter, and oil spill containment.

The modernized PRV design removed the mechanical components above the old headcover. The design did not require the components' restoration and re-installation since the hydraulic cylinder and stop tower replaced these parts on the new digitally linked PRV.

Precision Machine developed the overall design for the PRV modernization including the subassemblies (hydraulic control manifold, programmable logic controller (PLC), headcover, cylinders, etc.) and changes internal to the PRV housing and valve in order to meet the Government's specified functional design criteria. Five PRVs (Units N3, N7, N2, N4, and A6) were overhauled and modernized under Contract No. R06PC30062. Under Contract No. R11PC30062, nine additional PRVs (Units N1, N8, A8, A5, A1, A3, N6, A9, and N5) will be overhauled and modernized. Under Contract Nos. R06PC30062 and R11PC30062, additional PLCs and hydraulic control manifolds were procured which would be necessary in order to modernize the remaining PRVs. The A2/A4/A7 PRVs use original mechanical linkage and water operated components which will require replacement with digitally controlled, oil-operated hydraulic components in order to be modernized.

Additional Supplies/Services Required to Meet Agency Need:

Hoover Dam has received additional funding which can be utilized to modernize the three remaining PRVs (A2/A4/A7). A new contract is required to modernize and convert PRV Units A2, A4, and A7 to a digitally controlled hydraulically operated unit. The conversion process replaces all the major water operated portions of the PRV. This includes a new large diameter head cover with hydraulic cylinder mount assembly; a new hydraulic cylinder that is 3-feet in diameter with a 2-foot stroke; a new gas and oil accumulator assembly designed for 3000-psi; a new hydraulic pump assembly rated for the same pressure; installation of a Government owned control digital/hydraulic manifold; and Digital Control Interface shall be installed and commissioned by the contractor. Previous overhaul work done on the PRV Units A2 will reduce repair work

below the head cover of A2, however, the large water operated assembly will still be shipped to the contractor's facility to be modified to attach to the new hydraulic equipment supplied in this modification of the existing contract work. A4 and A7 will be completely modified below the headcover to change the closing design from down to open, to a design that moves up to open so that all Hoover PRVs operate alike using standardize components. All the remaining work (mobilization, disassembly, etc.) remains identical in nature to previous PRV work.

4. **Statutory Authority Permitting Other than Full and Open Competition.**

	Authority	FAR Coverage	Application
<input checked="" type="checkbox"/>	41 U.S.C. 253(c)(1)	FAR 6.302-1	Only one responsible source and no other supplies or services will satisfy agency requirements
<input type="checkbox"/>	41 U.S.C. 253(c)(2)	FAR 6.302-2	Unusual and compelling urgency
<input type="checkbox"/>	41 U.S.C. 253(c)(3)	FAR 6.302-3	Industrial mobilization; engineering, developmental or research capability; or expert services
<input type="checkbox"/>	41 U.S.C. 253(c)(4)	FAR 6.302-4	International Agreement
<input type="checkbox"/>	41 U.S.C. 253(c)(5)	FAR 6.302-5	Authorized or required by statute
<input type="checkbox"/>	41 U.S.C. 253(c)(6)	FAR 6.302-6	National Security
<input type="checkbox"/>	41 U.S.C. 253(c)(7)	FAR 6.302-7	Public Interest

5. **Demonstration of Contractor's Unique Qualifications.**

One of the goals of the PRV modernization work was to improve the safety and reliability of the PRV equipment in order to prevent damage to the penstock. Hoover Dam can achieve this goal by using standardized equipment. This reduces confusion during emergency conditions since all units will be functionally identical above the floor. Hoover Dam's PRV modernization requires the standardization of digital controls and hydraulic manifolds in order to communicate with the Power House SCADA operating system. In order to both modernize and standardize the PRVs, the components must be identical in design, manufacture, assembly, and function to those already provided for the modernized PRVs. All of the engineering and design development has been done for the previous 14 PRVs which was completed over two contracts of 5-years each. The technical data to assemble and configure the components into a fully functioning system is not commercially available, since the overall design and modernized parts were part of a contract that was modified to supply them. The firm that developed the drawings and designs, provided components which are proprietary and therefore limits competition.

PRV Units A2, A4, and A7 were refurbished in 2006/2007 but the mechanically operated components for these valves will require replacement with digitally controlled, oil-

operated hydraulic components. Additional work is required to make these units compatible with the hydraulically operated PRVs that have been modernized. Hoover Dam has received additional funding and now requests that PRV Unit A2, A4, and A7 be modernized.

The proposed sole source contractor is Andritz Hydro Corporation (Andritz), 10735 David Taylor Drive, Suite 500, Charlotte NC. Andritz Hydro is the only responsible source that can provide the services required under this procurement action since they have acquired the firm (Precision Machine) which did all design and development.

Contract No. R11PC30062 was awarded on September 15, 2011 under solicitation No. R11PS30062. In order to be considered qualified for the work, interested offerors were required to demonstrate experience in the modernization of water operated PRVs to digitally controlled hydraulic operation, as well as provide a conceptual design in their proposal for the conversion of PRV Units N1 and N8 to a modernized hydraulically operated PRV. *In response to the request for proposal, **one proposal** was received from Precision Machine and Supply Inc.* Precision Machine has been merged with Andritz Hydro Corporation and a novation agreement has been executed. The contractor's name, for Contract No. R11PC30062, is now changed to Andritz Hydro Corp. Andritz now assumes all obligations under the contract as well as all proprietary designs and drawings.

The personnel of Precision Machine who possess the knowledge and experience to overhaul/modernize the PRVs were retained by Andritz as part of the merger. As part of the merger, Precision Machine's shop at Lewiston ID was closed and personnel and equipment were relocated to its other plant located in Spokane WA. The majority of the components under this contract have been manufactured by the Spokane WA plant which is owned by Andritz.

Precision Machine developed the overall design and engineering for the PRV modernization including the headcover, hydraulic cylinders and changes to the internal portions of the PRV housing and valve in order to meet the Government's specified functional design criteria.

With the new design, the PRVs are converted from a mechanical to computer controlled hydraulic oil system to operate the PRV at the desired rate of opening and closure. Precision Machine developed the design for the modernized PRVs and worked in conjunction with American Governor and Comoso to provide fully functioning units.

Andritz Hydro Corp. merged with Precision Machine in 2015. Andritz Hydro Corp. now owns the proprietary rights of Precision Machine's design for the modernized PRVs. The proprietary data restricts competition that is a disadvantage to other vendors/sources.

Hoover Dam's PRV modernization requires the standardization of digital controls and hydraulic manifolds. In order to both modernize and standardize the PRVs, the components must be identical in design, manufacture, assembly, and function to those already provided for the modernized PRVs. This was one of the reasons that the Government committed to buying additional control boxes and manifolds for future PRV modernization work.

The technical data to assemble and configure the components into a fully functioning system is not commercially available, since the overall design and modernized parts are owned exclusively by private firms and are proprietary. For these reasons, it naturally restricts competition in a competitive marketplace. If the Government attempted to try and compete this requirement, interested vendors would have to expend huge amounts of time and money to perform reverse-engineering in order to create a design that is compatible with the existing modernized PRVs.

Based on the market research included in Sections 6 and 8 below, it is not in the best interest of the Government to attempt to procure these services through full and open competition, as it is doubtful that any companies would respond.

Based on costs incurred to prepare Solicitation No. R11PS30062, the estimated procurement costs would be also be around \$50,000.00 based on escalation. The work must be performed during scheduled and planned outages. There are long lead times to make the parts that would be required to modernize the three remaining PRVs. If this requirement were awarded to a new contractor, a transition period would be required and a new contractor would have to develop a design that would be compatible with existing modernized PRVs. The previously procured Government acquired PRV components would be furnished to a new contractor. A new contractor's design would have to integrate these supplied items. Additionally, new employees would require background checks which could take at least two months. Given the need for a transition period, competitively awarding this action would result in long unacceptable delays and a high probability the costs would not be competitive with the existing designed PRVs.

Based on the above reasons, FAR 6.302-1 is the appropriate citation in this instance.

6. Description of efforts made to maximize competition.

A sources sought notice was published to FedBizOpps on April 14, 2016. Only one company (Andritz) submitted a capability package. Inquiry was received from Ross Valve Mfg. Co. This company did not furnish a capability package and stated that due to time constraints and other obligations they would not be able to commit at this time. Market research was conducted via an internet search of the Small Business

Administration's Dynamic Small Business Search and no technically qualified firms were identified (see Section 8 below).

Additionally, an attempt was made to procure modernization and overhaul of the A2 PRV through a contract modification to Contract No. R11PC30062. This modification action was subsequently cancelled as it was determined that there was not sufficient time to get a contract modification awarded in order to meet the scheduled outage. A special notice was posted to FedBizOpps on August 19, 2015. Interested concerns were invited to submit capability statements in order for the Government to determine whether to conduct a competitive procurement. *No sources expressed interest in this procurement action.*

7. Determination of Fair and Reasonable Cost.

The contracting officer will ensure that the additional work is negotiated at a fair and reasonable price prior to award, based upon cost/price analysis and prior acquisition history.

8. Description of Market Research Conducted.

In addition to the action listed in Section 6, market research was conducted via an internet search of the Small Business Administration's Dynamic Small Business Search and queries were made to determine if there were HubZone or Service Disabled Veteran Owned Small Business firms that were capable of performing this work in order to meet the Lower Colorado Region's small business goals for these targeted socioeconomic classes. Under NAICS 333611, there were profiles for 37 Service Disabled Veteran Owned Small Business firms and 14 HUBZone firms. Based on the capabilities narrative identified in the vendor profiles and a search of available webpages, there were not any firms that had the capability to perform this work.

9. Any Other Supporting Facts.

For the reasons stated in Section 5, it would not be in the best interest of the Government to spend the time and resources to develop a new requirements package and solicitation in order to procure services to modernize and overhaul PRV Units A2, A4, and A7 through full and open competition. Since only one proposal was received in response to solicitation No. R11PS30062, it is highly doubtful that another company would submit a proposal for this specific requirement. Based on available accounting information, the procurement costs for Solicitation No. R11PS00062 were around \$40,000.00 and the costs would be around \$50,000 to procure this requirement competitively. The standard procurement action lead time for conducting a competitive procurement would be at least 180 days. This work must be scheduled and planned to be performed during a specific

unit outage period. Conducting a competitive procurement could cause delays in getting the first PRV Unit A2 modernized if a competitive award was not made in sufficient time for work to be performed prior to and during the outage period. Additionally, there are long lead times for making parts (i.e., cylinder, headcover, adapter shaft) required to modernize the PRVs.

10. Listing of Interested Sources.

As stated in Section 6, a sources sought notice was posted to FedBizOpps to determine if there were interested sources with experience and capability to perform modernization and overhaul on PRV Units A2, A4, and A7. Only one company (Andritz Hydro) submitted a capability package. Inquiry was received from Ross Valve Mfg. Co. but this company did not submit a capability package. Also, as stated in Section 6 only one proposal was received in response to Solicitation No. R11PS30062 for modernization, conversion, and overhaul of PRV Units N1, N8, A8, A5, A1, A3, N6, A9, and N5. The proposal was received from Precision Machine, which has been acquired by Andritz Hydro.

11. Actions Taken to Remove Barriers to Competition.

See Sections 3 and 5 which explain how competition for modernization/overhaul of the three remaining PRVs is restricted due to various reasons. Upon execution of the work required under this procurement action, all seventeen pressure regulating valves will be modernized and overhauled at Hoover Dam. At the completion of the proposed work, Hoover Plant Maintenance and Operations will have standardized PRVs which will require a minimal number of spare parts be stocked, less training since all are identical above the floor and all manuals /testing are standard.