

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

Contract No.	R11PC30062	Contract Specialist:	Rita Horkan
Contract Title:	Modernization, Conversion, and Overhaul of Pressure Regulating Valves, Hoover Dam, AZ-NV		

Introduction: 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 offeror for the above requirement. This JOTFOC follows the format and contains all the information required under FAR 6.303-2.

1. Identification of Agency, Contracting Activity and Document.

Bureau of Reclamation, Lower Colorado Regional Office, Justification for other than Full and Open Competition.

2. Nature and/or Description of Action Being Approved.

This J&A is for the negotiation and award of a sole source modification through other than full and open competition. The equipment being procured consists of additional quantities of specifically designed programmable logic controllers (PLCs) and hydraulic control manifolds. Modification No. 0006 will be negotiated with Precision Machine & Supply, Inc., 3218 East Main Street, Lewiston ID 83501. The independent Government cost estimate is \$397,995.00 for the additional equipment.

3. Description of the Supplies or Services Required to Meet Agency's Need

Background

Various contractors designed and manufactured pressure-regulating valves (PRVs) as part of the seventeen generators at Hoover Dam, located near Boulder City, Nevada. The various contractors all installed their own designs at Hoover Dam. For example, Pelton designed and manufactured the PRV on unit A2, while Allis Chalmers manufactured the PRV on unit A3. The A2 Pelton design operates by raising a piston, while the A3 Chalmers design lowers a piston. In order words, the PRVs operate in opposite directions. There are other examples of non-standard PRV designs throughout the power plant.

Under Contract No. 07CP308064, programmable logic controllers were installed on the generating units. These new programmable logic controllers made it possible to control a modern hydraulic system on the PRVs.

Contract No. R06PC30062 was awarded to Precision Machine & Supply Inc. (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 also modernizing PRVs in 2007. 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 drivers; 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 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.

Under Contract No. R06PC30062, Precision Machine developed the overall design for the PRV modernization including the subassemblies (hydraulic control manifold, programmable logic controller, headcover, cylinders, etc.) and changes internal to the PRV housing and valve in order to meet the Government's specified functional design criteria.

Current Requirement

To date, Hoover Dam has overhauled and modernized five PRVs (N3, N7, N2, N4, and A6). The modernized PRVs are standardized and the components and operation are identical. Under Contract No. R11PC30062 (which was awarded to Precision Machine), Hoover Dam will overhaul and modernize nine additional PRVs (N1, N8, A8, A5, N6, A3, A1, A9, and N5). Three PRVs were refurbished to original specifications, including mechanical linkage to wicket gates and lake water hydraulic operation. These were the A4 PRV (2001 PRV overhaul) and A2 and

A7 PRVs (2008 PRV overhauls). The original mechanical linkage and water-operated hydraulic components at these valves will require replacement with digitally controlled, oil-operated hydraulic components at a future date. Hoover Dam has received funding in order to procure additional PLCs and manifolds which would be necessary in order to modernize the last three PRVs (A2, A4, and A7) at a future date. Precision Machine and its subcontractors (American Governor and Controlled Motion Solutions (Comoso) designed the critical electronic and hydraulic controls for the modernized PRVs. Hoover Dam cannot procure these items under a competitive contract because the design of these items is proprietary. Furthermore, Precision Machine, Comoso, and American Governor have exclusivity agreements to the design and systems.

4. Statutory Authority Permitting Other Than Full and Open Competition.

The statutory authority for use of other than full and open competition for this transaction is as follows: *[check the applicable FAR 6.302 authority.]*

- FAR 6.302-1 Only one responsible source and no other supplies or services will satisfy agency requirements (10 U.S.C 2304(c)(1) or 41 U.S.C 253(c)(1)).
- FAR 6.302-2 Unusual and compelling urgency (10 U.S.C 2304(c)(2) or 41 U.S.C 253(c)(2)). *(This justification may be made and approved after contract award when preparation and approval prior to award would unreasonably delay the acquisition.)*
- FAR 6.302-3 Industrial mobilization; engineering, developmental, or research capability; or expert services (10 U.S.C 2304(c)(3) or 41 U.S.C 253(c)(3)).
- FAR 6.302-4 International agreement (10 U.S.C 2304(c)(4) or 41 U.S.C 253(c)(4)).
- FAR 6.302-6 National security (10 U.S.C 2304(c)(6) or 41 U.S.C 253(c)(6)).
- FAR 6.302-7 Public interest (10 U.S.C 2304(c)(7) or 41 U.S.C 253(c)(7)). *(Requires approval of head of the executive agency.)*

5. Proposed Contractor's Unique Qualifications/Nature of Acquisition Requiring Use of Cited Authority.

This procurement action will be negotiated with Precision Machine, 3218 East Main Street, Lewiston ID 83501. Under Contract No. R06PC30062, the modernized PRVs were converted from a mechanical to computer controlled hydraulic oil system to operate the PRV at the desired rate of opening and closure to meet the Government's design criteria. Precision Machine developed the entire system. The contractor developed the design, manufactured new replacement components, refurbished embedded existing components and made necessary changes to existing components for compatibility to function with the modernized PRV. Precision Machine developed the design for the modernized PRV and worked in conjunction with American Governor and Comoso to provide fully functioning units. Precision Machine, Comoso, and American Governor have exclusivity agreements to the design and systems.

Nine additional PRVs will be modernized under Precision Machine's current Contract No. R11PC30062. After completion of the work under Contract No. R11PC30062, there will remain three PRVs which will not be modernized. In order to modernize and standardize the remaining PRVs, three additional programmable logic controllers must be obtained. The components must be identical in design, manufacture, assembly, and function to those already provided for

the modernized PRVs. The technical data to assemble and configure the components into a fully functioning system is not available since Precision Machine developed the overall design to modernize PRVs.

It is more economical to procure the additional control systems and manifolds under one contract rather than possibly procure, negotiate, and award three separate purchase orders/contracts to obtain the required PLCs and hydraulic manifolds required to modernize the three remaining PRVs and to ensure that they are all standardized. Additionally, it is economical to procure these two critical components under a contract modification to Precision Machine's current contract rather than incur additional procurement costs to solicit, negotiate, and award a separate sole source contract. Additional procurement lead time would also be required. These are additional risks related to the required hardware and software becoming obsolete which could then require a new design and result in non-standardized PRVs.

Precision Machine designed the modernized PRV system. Precision Machine has declared on their drawings that this design is proprietary. Comoso and American Governor provided designs and schematics in response to Precision Machine's requirements. Precision Machine required that the Comoso hydraulic manifold correctly control the flow of high pressure hydraulic oil into and out of the hydraulic cylinder in response to commands received from the American Governor programmable logic controller. Comoso has also declared their design of the hydraulic systems proprietary, as it was specifically designed to meet the unique requirements for Hoover Dam's modernized PRV. One particular subassembly of the new hydraulic manifold was built by Precision Machine using parts provided by Comoso. American Governor designed the digital control systems by utilizing non-proprietary, off-the-shelf hardware and software. American Governor adapted project-specific software as needed to control the specific style of PRV mechanism in use for the modernized PRVs. There is a licensing agreement between Precision Machine, American Governor, and Comoso. In order to obtain the PLC systems and manifolds to realize the benefits of standardization mentioned earlier, the Government will need to purchase the programmable logic controllers and manifolds through Precision Machine. Due to safety and reliability requiring standardized PRV equipment, the Government will achieve best quality by modifying the existing contract to purchase the equipment. A significant duplication of effort would be required for different companies to establish their own designs that matched the existing, modernized, PRV design. The projected lead time for Comoso to supply the hydraulic control manifolds is approximately 15 weeks after receipt of an order. The lead time for American Governor to supply the programmable logic controllers is approximately 6 months from receipt of an order.

It is likely that award to any other source would result in unacceptable delays and substantial duplication of cost to the Government, which would not be recovered through competition. Another source would have to reverse engineer Precision Machine's designed hydraulic manifold controls and programmable logic controllers.

6. Efforts Made to Ensure That Offers are Solicited From as Many Potential Sources as Possible.

Pursuant to FAR 5.101(a), the proposed modification action was posted on the Federal Business Opportunities (FedBizOpps) website.

7. Determination of Fair and Reasonable Price.

The contracting officer will ensure that the items described herein are negotiated at a fair and reasonable price to the Government. A detailed price analysis will be performed. Information other than cost or pricing data may be obtained and cost analysis performed, if appropriate.

8. Market Survey.

In accordance with FAR 6.302-1(d)(2), this requirement has been synopsisized. Industry was advised of the pending sole source procurement and inquiries were solicited from interested parties. No sources expressed interest in this sole source procurement. As previously stated, efforts to obtain competition for this action are not feasible since other sources would have to reverse engineer Precision Machine's designed hydraulic manifold controls and programmable logic controllers.

9. Additional Supporting Facts for Use of Other Than Full and Open Competition.

FAR 6.302-1(a)(2)(iii)(A) provides that highly specialized services may be deemed available only from the original source when it is likely that award to any other source would result in "substantial duplication of cost to the Government that is not expected to be recovered through competition." The Government has already paid for the design for the modernized PRVs. As stated previously, Hoover Dam's goal is to standardize all PRVs for safety and reliability. The same design can be used to modernize the remaining PRVs and therefore will not result in any additional design costs.

Because Precision Machine developed the design to modernize the PRVs, technical data is not available to obtain competition for this requirement. The hydraulic control manifolds and programmable logic controllers were originally designed specifically to modernize PRVs N3, N7, N2, N4, and A6. Any competing contractor would not be able to provide the required items without accomplishing a significant and unnecessary amount of work to reverse engineer the electronic and hydraulic controls since the items must be standardized and compatible with existing modernized PRVs, as well as the nine PRVs which will be modernized under Contract No. R06PC30062. Any competing contractor would not be able to provide the required items without accomplishing a significant and unnecessary amount of work to reverse engineer the electronic and hydraulic controls since the items must be standardized and compatible with existing modernized PRVs. Award to another source would cost the Government time with regards to a possible learning curve and time to be able to satisfy Hoover Dam's requirements to modernize and standardize PRVs.

If the additional programmable logic controllers and hydraulic control manifolds are not procured timely, there is significant risk that hardware and software could become obsolete if manufacturers change or discontinue making particular components. Different software and hardware issues could create compatibility issues and possibly require a different design and result in non-standardized modernized PRVs. All hardware components will remain identical. This will eliminate the possibility of having different hardware versions in future programmable logic controllers as hardware manufacturers update their product lines. The programmable logic controller software for all of the units will remain identical. If future programmable logic controllers were supplied with different hardware versions, then different software may also be required to operate each programmable logic controller. Buying all of the programmable logic controllers now will eliminate the possibility of multiple software versions.

American Governor developed the software utilized in the programmable logic controllers. Hoover Dam has received the license to use the software. A license would not be required for the additional quantities to be acquired under this procurement action.

10. Listing of Sources Expressing Interest in Acquisition.

No sources expressed an interest in the acquisition as a result of the sources sought notice published on the FedBizOpps website.

11. Action Taken to Remove and Overcome Barriers to Competition.

For this procurement action, there is no alternative to the recommended action.

12. Approvals. The supporting data, which is the responsibility of the Bureau of Reclamation technical personnel and forms the basis for this justification, have been certified as complete and accurate by means of the below signature on this document. As required by FAR 6.303-2(a)(12) and 6.304(1), (a) the contracting officer certifies that the justification is accurate and complete to the best of her knowledge and belief and (b) the signatures demonstrate the certifications and approvals necessary for this Justification for Other Than Full and Open Competition.

Certified Complete and Accurate by:

Certification by Requirements\Technical Personnel:

Jeff Ormen MECHANICAL ENGINEER 3/20/2012
Signature Title Date

Prepared by:

Julia Jorkan Contract Specialist 3/20/2012
Signature Contract Specialist Date

Concurred by:

Megan _____ 3/30/12
Signature Contracting Officer Date

Approved by:

Beverly Nelson _____ 4/4/12
Signature Chief of the Contracting Office/Asst. Competition Advocate Date