

2. AMENDMENT/MODIFICATION NO. 001	3. EFFECTIVE DATE August 28, 1998	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
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6. ISSUED BY Bureau of Reclamation Lower Colorado Region P.O. Box 61470 Boulder City NV 89006-1470	CODE LC-3114	7. ADMINISTERED BY (If other than Item 6)	CODE
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and ZIP code)	(✓)	9A. AMENDMENT OF SOLICITATION NO. 98-SI-30-12390
	✓	9B. DATED (SEE ITEM 11) August 13, 1998
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [] is extended, [X] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing Items 8 and 15, and returning 1 copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT/ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. **IMPORTANT:** Contractor [] is not [] is required to sign and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

Project Title: Furnish Rotating & Stationary Wearing Rings for Generator Units A-3 & A-4, Hoover Dam Powerplant, Boulder Canyon Project, Arizona - Nevada

Purpose of Amendment: The purpose of this amendment is to make revisions and/or corrections to: (1) Foreword, (2) Section B, (3) the Specifications, (4) Section D, (5) Section M, and (6) respond to questions posed herein.

Receipt of Bids: The date and time for receipt of bids remains September 14, 1998 at 2 p.m., local time. The place for receipt of bids remains the Bureau of Reclamation, Lower Colorado Regional Office, Annex Building, Room AA-123, Nevada Hwy and Park Street, Boulder City, Nevada.

Acknowledgment: See block 11 above regarding how to acknowledge this amendment. The acknowledgment must be received at the place designated for receipt of offers (see block 14 of the "Solicitation, Offer, and Award," Standard Form 33).

Bid Modification: See block 11 above if you have submitted your bid and now desire to modify it or withdraw it.
 (Continued on following page)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
15B. CONTRACTOR/OFFEROR	16B. UNITED STATES OF AMERICA
15C. DATE SIGNED	16C. DATE SIGNED
_____ (Signature of person authorized to sign)	BY _____ (Signature of Contracting Officer)

Description of Changes:

1. In the FOREWORD, the two paragraphs regarding site visits are deleted.

Instructions: In the solicitation, remove the FOREWORD and replace with the attached revised FOREWORD.

2. Revisions are made to the Table of Contents.

Instructions: In the Table of Contents, remove pages i and ii and replace with the attached revised pages i and ii.

3. In the Schedule, the dimensions for the following items are changed:

Item No. 3. to 141.40 inches, from 141.25 inches

Item No. 4. to 137.40 inches, from 137.25 inches

Instructions: In Section B, remove pages B-1 and B-2 and replace with the attached revised pages B-1 and B-2.

4. Revisions and/or corrections are made to the specifications.

Instructions: In Section C, remove pages C-1 through C-11 and replace with the attached revised pages C-1 through C-11.

5. In Section D, revisions are made to paragraph D.1(a), and paragraph D.2, "Preparation for Shipment and Handling," is added.

Instructions: In Section D, remove page D-1 and replace with the attached revised pages D-1 and D-2.

6. In Section M, paragraph M.3, reference to the provision 1452.225-901, "Comparison of Offers," is deleted.

Instructions: In Section M, remove page M-1 and replace with the attached revised page M-1.

7. The questions on the following pages 3 and 4 of this amendment were posed by potential bidders and are hereby responded to by this amendment.

Questions and Answers

Question.

Subsection C.3 Technical Requirements

C.3.1.a. Turbine Wearing Rings, General:

The reference to contractor supplied nickel-aluminum bronze bolts does not contain sizes and specific information for supply of the bolts.

Answer.

This was an error in the specification and has been deleted in the amended technical paragraphs.

Question.

C.3.1.b. Turbine Wearing Rings, Materials:

Does the reference to passivation as a final procedure refer to a procedure to be performed at Hoover Dam after final machining? The benefits of passivation will be lost, after machining of the passivated surfaces, if performed on the rough machined rings.

Answer.

The amended technical paragraph has changed the word "passivated" to "solution annealed". The Bureau of Reclamation realizes that the benefits of passivation would be lost in the machining process here at Hoover Dam. Efforts will be made to passivate the wearing rings after final machining.

Question.

The solicitation calls out "ductility shall be 15 percent or greater." The minimum elongation per ASTM B271 is 6 percent. Based on our extensive experience in producing nickel aluminum bronze, we believe a minimum requirement of 12 percent is attainable in this alloy. Can this be modified to 12 percent minimum?

Answer.

No, our design engineer requested ductility of 15 percent or greater. We believe a ductility of 15 percent is achievable and that the end product would be in the best interest of the Government. The statement made by the potential bidder is unclear. For any change to be made, potential bidders would need to explain their reasons.

Question.

The aluminum content is called out as shall be 10.5 percent. Can this be modified to read 10.0 - 10.5 percent aluminum to reduce hardness and brittleness?

Answer.

This change has been made. See amended technical paragraphs.

Question.

C.3.1.e. Turbine Wearing Rings, Submittals:

We suggest that the chemical test reports be submitted 14 days after casting, if required. The mechanical test reports cannot be completed until after heat treatment which may not be completed until 1 to 2 weeks prior to shipment of the rings.

Answer.

The original sentence was written to allow some flexibility to the Contractor. It has been amended to read "The test reports shall be submitted 14-calendar days prior to shipment of completed castings."

Question.

Are there any drawings available?

Answer.

Drawings are not deemed necessary with the revisions made herein.

Question.

What are the exact dimensions, height and thicknesses required?

Answer.

Refer to paragraph C.3.1.c. "Dimensions." There is a Table that specifies the height and the inside and outside diameter that are required for each of the items.

FURNISH ROTATING & STATIONARY WEARING RINGS FOR
GENERATOR UNITS A-3 & A-4
HOOVER DAM POWERPLANT

BOULDER CANYON PROJECT
NEVADA

FOREWORD

The work to be performed under this solicitation consists of furnishing and delivering two of each of the following items, for a total quantity of eight:

- (a) Centrifugally cast one-piece upper rotating Stainless Steel wearing rings; and
- (b) Centrifugally cast one-piece lower rotating Stainless Steel wearing rings;
- (c) Centrifugally cast one-piece upper stationary Nickel-Aluminum Bronze wearing rings; and
- (d) Centrifugally cast one-piece lower stationary Nickel-Aluminum Bronze wearing rings for generator turbine runners.

The items are not required to be installed under these specifications. Installation will be performed by Government personnel during the next regularly scheduled maintenance outage for these generators.

The work is located at Hoover Dam, which is approximately seven miles northeast of Boulder City, Nevada, and 32 miles from Las Vegas, Nevada, in Clark County, Nevada.

~~PROSPECTIVE BIDDERS ARE ENCOURAGED TO VISIT THE SITE PRIOR TO
SUBMITTING A BID.~~

~~PROSPECTIVE BIDDERS DESIRING TO VISIT THE PROJECT SITE SHOULD CONTACT
MR. CHUCK WILEY, MECHANICAL ENGINEER, LOWER COLORADO DAMS FACILITIES
OFFICE, BOULDER CITY, NV; TELEPHONE (702) 293-8314.~~

~~FOR DATE AND PLACE OF BID OPENING, SEE "SOLICITATION, OFFER AND AWARD,"
STANDARD FORM 33, IMMEDIATELY FOLLOWING THE "TABLE OF CONTENTS."~~

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FOREWORD

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B.1 WBR 1452.214-908 THE REQUIREMENTS--BUREAU OF RECLAMATION--LOWER COLORADO REGION (NOV 1996)

- (a) The Contractor shall furnish the items identified in this Section, in accordance with the terms, conditions, and specifications contained in the contract.
- (b) Bidders are cautioned to carefully review the bid submission requirements contained in Section L. Failure to comply with these requirements may result in a bid being declared nonresponsive.
- (c) Bids will be considered for award on the Schedule in Paragraph B.2, but no bid will be considered for award for only a part of the schedule. Bids for only a part of the schedule will be considered nonresponsive and will be rejected.
- (d) Bidders shall complete the bidding schedule in Section B and furnish any additional information required in Section B, as applicable.
- (e) No drawings or descriptive literature are required to be submitted with the bid.

B.2 THE SCHEDULE

ITEM NO.	SUPPLIES/SERVICES	QUANTITY AND UNIT	UNIT PRICE	TOTAL PRICE
1.	Furnish Centrifugally Cast One-piece Upper Rotating Stainless Steel Wearing Rings (138.85 inches Minimum Outside Diameter)	2 each	\$ _____	\$ _____
2.	Furnish Centrifugally Cast One-piece Lower Rotating Stainless Steel Wearing Rings (134.85 inches Minimum Outside Diameter)	2 each	\$ _____	\$ _____
3.	Furnish Centrifugally Cast One-piece Upper Stationary Nickel Aluminum Bronze Wearing Rings (141.25 141.40 inches Minimum Outside Diameter)	2 each	\$ _____	\$ _____

%

ITEM NO.	SUPPLIES/SERVICES	QUANTITY AND UNIT	UNIT PRICE	TOTAL PRICE
4.	Furnish Centrifugally Cast One-piece Lower Stationary Nickel Aluminum Bronze Wearing Rings (137.25 137.40 Minimum Outside Diameter)	2 each	\$ _____	\$ _____
			TOTAL	\$ _____

%

B.3 WBR 1452.214-906 BIDDING SCHEDULE COMPLETION INSTRUCTIONS--BUREAU OF RECLAMATION--LOWER COLORADO REGION (NOV 1996)

NOTE OF CAUTION TO BIDDERS: When completing the bid schedule, the price entered in the "Amount" column shall be the mathematical product of the quantity multiplied by the unit price. Rounding up or down is not permitted. If a price entered in the "Amount" column has been rounded, the Contracting Officer will correct such amount, pursuant to the bid preparation provision(s) in Section L for the purposes of determining the apparent low bidder, and any such corrections will appear on the contract award document.

SECTION C - DESCRIPTION/SPECIFICATIONS

SUBSECTION C.1--GENERAL REQUIREMENTS

C.1.1. GENERAL REQUIREMENTS

It is required that there be furnished and delivered complete in accordance with the contract provisions and clauses, these specifications, hereof, the Wearing Rings for the ~~Generator~~ Turbine Runners, Hoover Dam Powerplant, Boulder Canyon Project, Arizona - Nevada.

The sets of Wearing Rings being furnished under these specifications are required for
% ~~Generators~~ **Turbines** A-3 and A-4 at the above-named installation which is located about 8 miles northeast of Boulder City, Nevada, in Clark County, Nevada.

The warehouse delivery site is situated approximately 7 miles northeast of Boulder City, Nevada, in Clark County, Nevada.

The material ~~or equipment~~ is not required to be installed under these specifications. Installation will be by Government personnel during the next regularly scheduled maintenance
% outage for these ~~generators~~ **turbine runners**.

C.1.2. DESCRIPTION OF THE WORK

The work to be performed consists of fabricating ~~appropriate size molds or forms for the casting of~~ centrifugally cast one-piece wearing rings.

The rotating wearing rings shall be CF-8 Stainless Steel as per ASTM A743 (1995), *Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant for General Application*.

The stationary wearing rings shall be C955 Nickel-Aluminum Bronze as per ASTM B271 (1996), *Standard Specification for Copper-Based Alloy, Centrifugal Castings*.

All castings shall be oversized and shall be machined to an approximate size prior to shipment to the Bureau of Reclamation. Final machining ~~to the final dimensions~~ will be performed by Government personnel.

C.1.3. SUBMITTAL REQUIREMENTS

a. General. - The Contractor shall furnish all materials and perform all work required for furnishing submittals to the Government, in accordance with this paragraph, Table 1A - List of Submittals, and the requirements in the provisions, clauses, and paragraphs of this contract.

The word "submittals" shall be interpreted to include drawings, data, manuals, certifications, test reports, curves, samples, color chips or charts, brochures, and other items furnished by the Contractor for approval, informational, or other purposes.

b. List of submittals. - Table 1A - List of Submittals lists the submittals required by this contract except those submittals which are required conditionally, required by entities other than the Bureau of Reclamation, or which are periodic in nature. Any submittal required to be submitted by the Contractor, but which is not listed in the table, shall be submitted in accordance with the applicable requirements of this contract. In case of a conflict between the requirements of this paragraph and the requirements included elsewhere in this contract, the requirements elsewhere shall take precedence over the requirements contained in this paragraph.

c. Submittals.--Each item in Table 1A (List of submittals) has been assigned an RSN (Required Submittal Number). The "Submittals required" column of the table specifies the material to be submitted for each RSN. All of the material specified for an RSN will be considered a complete set; and where the material required for an RSN is specified as separate or distinguishable parts, a complete set shall include all parts. Only complete sets shall be submitted.

The number of complete sets to be submitted, and the location to which they are to be sent, shall be in accordance with the "No. of sets to be sent to:" column of the table, except as provided below for sets of original material.

When an RSN involves submittal of original (non-copied) material, all original material, or as much thereof as is necessary to form a complete set, shall be included in just one complete set. This "originals" set shall be sent to the proper address, given in subparagraph e. below, as determined by the "Responsible code" column of the table and the following:

- (1) CO indicates Contracting Officer.
- (2) CE indicates Construction Engineer.

The "originals" set shall be counted as one of the complete sets required to be submitted under the "No. of sets to be sent to:" column of the table.

For each RSN, the Contractor shall submit complete sets of required submittal material under the cover of a transmittal letter. At the Contractor's option, complete sets for more than one RSN may be submitted under cover of the same transmittal letter, provided they have the same responsible code designation as shown in the table. The Contractor's transmittal letter shall include:

- (1) Reference to Bureau of Reclamation contract number and title.
- (2) Identification of responsible code as shown in the table.
- (3) Complete list of RSN(s) for which material is being submitted.
- (4) For each RSN, number of complete sets and list of materials included.
- (5) For each RSN, identification of the submittal as an initial submittal or a resubmittal.

d. Review of submittals furnished for approval.--The time required for review of each submittal or resubmittal furnished under an RSN for approval will not begin until the Government receives complete sets of all the submittal materials required for that particular RSN. The number of calendar days required for review of drawings or data submitted or resubmitted for approval will include the date the drawings or data are received by the Government, and will extend through the date of return mailing to the Contractor.

Except as otherwise provided in the specifications for specific submittals, the Government will require 20 calendar days for review of each submittal or resubmittal furnished by the Contractor for approval, and this review time will apply to each separate submittal or resubmittal whether the submittals are approved, not approved, or returned for revision.

If the Government uses time in excess of the specified number of calendar days for review of any submittal or resubmittal, additional time, not to exceed the excess time, will be added to the time allowed the Contractor for completion of the work affected by such excess time, to the extent it is demonstrated that the excess time caused delay. If the Government's review of two or more separate submittals or resubmittals is late and results in concurrent days of excess time, such days will be counted only once in computing an extension of the completion date. Further, if the Contractor fails to make complete approval submittals in the sequence and within the time periods specified in this contract, and thus precludes the Government from approving or considering for approval such submittals within the specified calendar day period, then the Contractor shall not be entitled to an extension of time allowed for completion of the work.

Unless otherwise specified, one set of the submittals required for approval will be returned to the Contractor either approved, not approved, or conditionally approved, and will be marked to indicate changes, if required. Submittals that are not approved or that require changes or revisions shall be revised and resubmitted for approval, and shall show changes and revisions with revision data. All requirements specified for the initial submittal shall apply to any resubmittals required. Unless otherwise specified, all submittals which are to be resubmitted shall be resubmitted by the Contractor within 20 calendar days after the Contractor has received the Government's comments.

e. Addresses.--The Contractor shall send the submittals to the applicable addresses listed below as required by Table 1A (List of Submittals).

The Contractor shall also send a copy of the transmittal letter to each of the addresses listed below that are not sent the submittal.

Submittals shall be sent as required by Table 1A (List of Submittals) to:

(1) Contracting Officer, Bureau of Reclamation, Attention: LC-3114, P.O. Box 61470, Boulder City NV 89006-1470

(2) Construction Engineer, Bureau of Reclamation, Attention: LCD-2000, P.O. Box 60400, Boulder City NV 89006-0400

Table 1A - List of Submittals

RSN	Item	Reference paragraph or clause	Responsible code	Submittals required	No. of sets to be mailed to:*		Due date or delivery time
					CO	CE	
C1	Payment (Electronic Funds Transfer)	52.232-28	CO	Payment information (SF-3881)	1	0	After award, but not later than 14 calendar days prior to submission of the first invoice
C2	Release of Claims	DOI 1452.204-70	CO	Release of claims (DI-137) against United States	1	0	After completion of work and prior to final payment
C3	Warranty	LCR 1452.246-902	CO	Warranty	1	0	Prior to final payment
M1	Metallurgical Properties	C.3.1	CE	Test report	0	3	Within 14 calendar days of completion of the castings and prior to shipment
D1	Shipping Provisions	D.2	CE	Packing Lists and Shipping notification of expected arrival date/time	1	2	7 days prior to shipping

*CO indicates Contracting Officer, and CE indicates Construction Engineer. For mailing addresses, see subparagraph entitled "Addresses" of paragraph entitled "Submittal Requirements."

f. Cost.--Unless otherwise specified, no separate payment will be made for preparing and furnishing submittals to the Government, and the cost thereof shall be included in the prices offered in the schedule for the applicable items of work requiring the submittals or other items of work.

SUBSECTION C.2--MATERIALS AND WORKMANSHIP

C.2.1. MATERIALS AND WORKMANSHIP - RECLAMATION

a. Materials.--Unless otherwise stated in these specifications, all materials used in the construction of the equipment shall be new and of the highest standard commercial quality as normally used for this type of equipment, considering strength, ductility, durability, best engineering practice, and the purpose for which the equipment is to be used.

Except as specified, materials shall conform to Federal specifications or standards, or, if there are no applicable Federal specifications, materials shall conform to the specifications or standards of ANSI (American National Standards Institute), ASTM (American Society for Testing and Materials), ASME (American Society of Mechanical Engineers), AWS (American Welding Society), or other nationally recognized standards organization. If the Contractor proposes to deviate from, or to use materials not covered by, the aforementioned specifications and standards, the Contractor shall submit, for approval, the justification for and exact nature of the deviation, and complete specifications for the materials proposed for use.

b. Workmanship. - The Contractor shall be responsible for the accurate manufacture and fabrication of materials in accordance with best modern practice and the requirements of these specifications, notwithstanding minor errors or omissions therein. All work shall be performed % by ~~mechanics~~ **personnel** skilled in their various trades.

~~Welding shall be performed only by properly qualified welders and in accordance with the best welding practice. Cracks and other defects disclosed when castings are cleaned or during machining operations shall be chipped to sound, clean metal before any repairs are made. If the removal of metal to uncover a crack or defect reduces the stress-resisting cross section of the casting to such an extent that the computed unit stress in the remaining metal is more than 30 percent in excess of the allowable stress, the casting may, at the option of the Contracting Officer, be rejected.~~

~~Castings requiring welding repairs at any stage of manufacture after the first annealing, shall be stress relieved, unless otherwise permitted by the Contracting Officer. Castings shall not be warped or otherwise distorted. The structure of the castings shall be homogeneous and free from excessive nonmetallic inclusions. An excessive s~~ Segregation of impurities or alloys % in a casting will be cause for its rejection.

C.2.2. MATERIALS TO BE FURNISHED BY THE CONTRACTOR

a. General. -- The Contractor shall furnish all labor, materials, equipment, instruments, and tools required in connection with the manufacture and testing of the ~~generator thrust bearing oil coolers~~ **turbine runner rotating and stationary wearing rings**. When a separate item % which includes the furnishing of any material is provided in the schedule, the cost of furnishing, hauling, storing, and handling shall be included in the price bid for that item. When a separate item is not provided in the schedule for furnishing any material required to be furnished by the Contractor, the cost of furnishing, hauling, storing, and handling shall be included in the price bid for the work for which the material is required.

The Contractor shall bear all cost of transporting ~~all generator thrust bearing oil cooler~~
% ~~materials~~ **turbine runner rotating and stationary wearing rings** from the Contractor's
shipping point or points to the point of destination (either delivery dock or delivery storage
area) at the Bureau of Reclamation's Central Warehouse.

The Contractor shall be responsible for all materials requiring special handling and storage
conditions during shipment, including controlling the effects of temperature, humidity, dust, or
% any other atmospheric conditions that may adversely affect the ~~thrust bearing oil coolers~~
turbine runner rotating and stationary wearing rings.

Materials furnished by the Contractor shall be of the type and quality described in these
specifications. The Contractor shall make diligent effort to procure the specified materials from
any and all sources, ~~but where because of Government priorities or other causes, materials~~
~~required by these specifications become unavailable, substitute materials may be used:~~
Provided that no substitute materials shall be used without prior written approval of the
Contracting Officer, said written approval to state the amount of the adjustment, if any, to be
made in favor of the Government. The Contracting Officer's determination as to whether
substitution shall be permitted and as to what substitute materials may be used shall be final
and conclusive. If the substitute materials approved are of less value to the Government or
involve less cost to the Contractor than the materials specified, an adjustment shall be made in
favor of the Government, and where the amount involved or the importance of the substitution
warrants, a deductive modification to the contract will be issued. No payments in excess of
prices bid in the schedule will be made because of substitution of one material for another or
because of the use of one alternate material in place of another.

b. Inspection of materials. -- Materials furnished by the Contractor which will become a part of
the completed work shall be subject to inspection in accordance with the clause 52.246-2,
"Inspection of Supplies - Fixed-Price." To allow sufficient time to provide for inspection, the
Contractor shall submit to the Contracting Officer, at the time of issuance, copies in triplicate of
purchase orders, including drawings and other pertinent information, covering materials on
which inspection will be made as advised by the Contracting Officer, or shall submit other
evidence in the event such purchase orders are issued verbally or by letter.

The inspection of materials at any of the locations specified above or the waiving of the
inspection thereof shall not be construed as being conclusive as to whether the materials and
equipment conform to the contract requirements under the clause 52.246-2, entitled
"Inspection of Supplies - Fixed-Price," nor shall the Contractor be relieved thereby of the
responsibility for furnishing materials meeting the requirements of these specifications.
Acceptance of all materials will be made only at the point of delivery.

(1) Submittals. -

Manufacturer's product data sheets and certifications of all materials shall be submitted
in accordance with this paragraph and paragraph C.1.3 (Submittal Requirements).
Each submittal shall be identified with the material specifications, the batch or lot
represented, the quantity ordered, and the Bureau of Reclamation solicitation number.

(a) Manufacturer's product data sheet. - Product data sheet shall include the composition of the materials, physical characteristics, and system used for attaining tolerances performance requirements.

(b) Manufacturer's method of measurement data sheet. - Application data sheet shall include the method, acceptable methods of casting and machining process.

(c) Certification. - Manufacturer's certification shall be furnished for all related materials for each type, batch, and lot of material.

The certification shall state that the material is of the same composition as material which previously has been found to comply with these specifications.

The Contractor shall be responsible for the accuracy of all certifications or data contained therein whether submitted by the Contractor, a manufacturer, a supplier, a subcontractor, or others.

C.2.3. REFERENCE SPECIFICATIONS AND STANDARDS

Materials, Contractor design, fabrication work, and other requirements which are specified by reference to Federal Specifications, Federal Standards, or other standard specifications or codes shall be in compliance with dates specified in these specifications. In the event of conflicting requirements between a referenced specification, standard, or code and these specifications, these specifications shall govern.

Unless otherwise specified, all materials that will become a part of the completed work shall be new and shall conform to the Federal or other specifications and standards referred to herein. Where reference specifications numbers are designated throughout these specifications, they refer to Federal Specifications unless otherwise noted. In the event that the materials are not covered by Federal or other specifications, the materials furnished shall be of standard commercial quality. Where types, grades, or other options offered in the reference specifications are not specified in these specifications, the material furnished will be acceptable if it is in accordance with any one of the types, grades, or options offered and is most suitable for the purpose intended.

Copies of many of the Federal Specifications and Standards may be examined at the office of the Bureau of Reclamation, Denver Office, Building 67, Denver Federal Center, West Sixth Avenue and Kipling Street, Denver, Colorado. Single copies of Federal Specifications and standards may be obtained without charge from any one of the General Services Administration Business Service Centers. See the provision at FAR 52.211-1, entitled "Availability of Specifications Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions."

Bureau of Reclamation Specifications and Standards may be obtained from the Bureau of Reclamation, Attn: D-8170, PO Box 25007, Denver CO 80225. This address may also be used to order the various manuals and standard specifications printed, reprinted, or published while

the Bureau of Reclamation was officially named the Water and Power Resources Service. All references to Water and Power Resources Service or any form derivative thereof shall be considered synonymous with the Bureau of Reclamation.

Addresses for obtaining some industrial and governmental (other than Federal and Bureau of Reclamation specifications and standards) specifications, standards, and codes are listed in the provision at FAR 52.211-3, entitled "Availability of Specifications Not Listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions."

The Contractor shall maintain at place of manufacture, a copy of all specifications, standards, codes, manuals, and other documents that are referenced in these specifications and that are pertinent to the materials being installed or work proceeding at that time. These shall be available for use by the Contracting Officer and the Contracting Officer's representatives.

~~C.2.4. WELDING~~

~~At the option of the Contracting Officer, minor cracks and other defects in the centrifugally cast one-piece wearing rings shall be repaired by the Contractor by welding. Welding method, welding procedures, welder qualifications, and welding operators shall be in accordance with Section IX, Part QW of the ASME Boiler and Pressure Vessel Code (1995).~~

SUBSECTION C.3--TECHNICAL REQUIREMENTS

C.3.1. Turbine Runner Wearing Rings

a. General.--

- % Each ~~generator turbine runner~~ will require stainless steel upper and lower rotating wearing rings. The upper and lower rotating wearing rings ~~will be securely attached to the stainless steel turbine runner and will be considered as moving parts.~~ The rotating wearing rings shall be attached to the runner by shrink fit. ~~A suitable shoulder shall be provided on the wearing ring to mate with a recess in the runner. Bolts, dowels, or hold-down rings will not be permitted.~~
- % Each ~~generator turbine~~ will require nickel-aluminum-bronze upper and lower stationary wearing rings. ~~The stationary wearing rings shall be fastened in place with nickel-aluminum-bronze bolts furnished by the Contractor. Wearing rings fastened to a steel retainer ring by means of a caulking strip are unacceptable.~~

The wearing rings shall be furnished oversize. Final machining of the wearing ring clearance surfaces will be done in the field by the Government to assure the correct clearance between the stationary and rotating wearing rings. ~~Final milling will be performed at Hoover Dam using a 10'-16' Cincinnati Extension-Type Vertical Boring Mill.~~

b. Materials.--

- The rotating wearing rings shall be CF-8 Stainless Steel as per ASTM A743 (1995) -- *Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant for General Application*. The centrifugally cast, one piece stainless steel rotating wearing rings shall have a ductility of 20 percent or greater. The rotating wearing rings shall be checked for defects using nondestructive test examinations and shall be repaired by government approved
- % method. As a final procedure, the stainless steel wearing rings shall be ~~passivated~~ **solution**
 - % **annealed**.

- The stationary wearing rings shall be C955 Nickel-Aluminum Bronze as per ASTM B271 (1996) -- *Standard Specification for Copper-Based Alloy, Centrifugal Castings*. Ductility shall be
- % 15 percent or greater. In addition, the aluminum content shall be **between 10 to 10.5** percent to reduce hardness and brittleness. The nickel-aluminum-bronze stationary wearing rings shall be heat treated, temper annealed to fix the grain, reduce warpage, eliminate brittleness or cracking and reduce intergranular pitting by cavitation. No substitute material is acceptable.

c. Dimensions.--

To assure that the dimensions listed in the table below can be attained, the wearing rings shall be measured from a common center point to obtain the radii and diameter.

- % Each of the wearing rings shall have threaded $\frac{1}{2}$ -**13 UNC, 1-1/8-inch minimum thread depth,**
- % holes for lifting eye bolts at 90 degree intervals on the top **center line** of the ring.

WEARING RING	MAXIMUM INSIDE DIAMETER	MINIMUM OUTSIDE DIAMETER	HEIGHT
Upper Rotating Stainless Steel Wearing Ring	136.00 inches	138.85 inches	6.00 inches
Lower Rotating Stainless Steel Wearing Ring	132.00 inches	134.85 inches	6.00 inches
Upper Stationary Nickel-Aluminum-Bronze Wearing Ring	138.25 inches	141.25 inches 141.40 inches	7.50 inches
Lower Stationary Nickel-Aluminum-Bronze Wearing Ring	134.25 inches	137.25 inches 137.40 inches	7.50 inches

d. Tolerances.--

The flat surface at the top and bottom of the wearing rings shall not be more than 1/8-inch out of plane.

The surface finish of the rotating and stationary wearing rings shall not exceed the maximum surface roughness in accordance with ANSI B46.1 (1995) -- *Surface Texture (Surface Roughness, Waviness, and Lay)*, with ~~425~~ **250** for all surfaces.

e. Submittals.--The Contractor shall submit test reports which give metallurgical (material and chemical) properties of the metals used to fabricate the rotating and stationary wearing rings. The test reports shall include a comparison of Brinell Hardness on the same scale for both metals. Three copies of the metallurgical test reports shall be mailed to the Construction Engineer, Bureau of Reclamation, Attention: LCD-2000, P.O. Box 60400, Boulder City, NV 89006-0400. The test reports shall be submitted ~~within 14-calendar days of completion of the castings~~ and prior to shipment of completed castings.

f. Inspection.--Onsite inspection of the factory and observation during the casting and machining process will be made by Charles Wiley, Chief Mechanical Engineer, Hoover Dam. The Contractor shall notify Mr. Wiley by telephone at (702) 293-8314 once the casting dates have been determined so that sufficient travel arrangements can be made.

The inspection of materials at any of the locations specified above or the waiving of the inspection thereof shall not be construed as being conclusive as to whether the materials and equipment conform to the contract requirements under the clause 52.246-2, entitled "Inspection of Supplies - Fixed-Price," nor shall the Contractor be relieved thereby of the

responsibility for furnishing materials meeting the requirements of these specifications.
Acceptance of all materials will be made only at the point of delivery.

g. Payment.--Payment for centrifugally casting the upper and lower rotating stainless steel wearing rings will be made at the respective unit prices bid therefor in the schedule, which price shall include the cost of materials, equipment, labor, incidentals, casting forms, machining to tolerances, and packaging and shipping of the final products to Hoover Dam.

% **Payment for centrifugally casting the upper and lower stationary Nickel-Aluminum**
% **Bronze wearing rings will be made at the respective unit prices bid therefor in the**
% **schedule, which price shall include the cost of materials, equipment, labor, incidentals,**
% **casting forms, machining to tolerances, and packaging and shipping of the final**
% **products to the Hoover Dam Central Warehouse.**

SECTION D - PACKAGING AND MARKING

D.1 WBR 1452.247-901 SHIPPING PROVISIONS--BUREAU OF RECLAMATION--LOWER COLORADO REGION (NOV 1996)

(a) Delivery point. - Offers shall be on the basis of delivery (f.o.b.) at the destination stated in the schedule. ~~The Contractor shall unload the wearing rings and place them in the area at the Central Warehouse yard, as directed.~~ **The Government shall be notified in advance of delivery such that rigging, crane and a storage site are made available for unloading.**

All materials and equipment shall be shipped on commercial bills of lading, and the cost of transportation from the shipping point or points to the destination shall be paid by the Contractor and included in the lump-sum price offered in the schedule. The Contractor shall be responsible for all damage in transit to the destination.

Proper precautions shall be taken with the wearing rings ~~and other sensitive devices~~ to prevent damage during shipment.

(b) Packing lists and shipping notification. - For all shipments made under this contract, the Contractor shall provide itemized packing lists enumerating the specific contents of each shipping container, as follows:

(1) One copy to accompany each shipment of the equipment.

(2) One copy shall be submitted to the Bureau of Reclamation, Attn: LC-3114, P.O. Box 61470, Boulder City NV 89006-1470.

(3) Two copies shall be submitted to the Bureau of Reclamation, Lower Colorado Dams Facilities Office Construction Engineer (Attn: LCD-2000), P.O. Box 60400, Boulder City NV 89006-0400.

At the time of shipment of the equipment, the Contractor shall notify the Bureau of Reclamation, Lower Colorado Dams Facilities Office, Construction Engineer (LCD-2000) of the expected arrival time of each shipment at the destination. In addition, the Contractor shall instruct the transporting agency to notify the same official when such shipment has arrived at the destination.

% D.2 WBR 1452.247-900 PREPARATION FOR SHIPMENT AND HANDLING--BUREAU OF RECLAMATION--LOWER COLORADO REGION (NOV 1996)

% (a) **The Contractor shall prepare all materials and articles for shipment in such a manner as to protect them from damage, and shall be responsible for and make good any and all damage due to improper preparation or loading for shipment.**

% **(b) Heavy or bulky parts or equipment shall be provided with eye bolts, lugs, or other**
% **lifting devices to facilitate handling with a crane, and, if necessary, shall be mounted on**
% **skids or crated. Where parts are boxed or crated and it is unsafe to attach slings to the**
% **box or crate, slings shall be attached to the parts and the slings shall project through the**
% **box or crate so that attachment can be readily made. Instructions for handling and lifting**
% **all parts, boxes, and crates shall be clearly painted on or attached to the part or crate.**
% **Any articles or materials that otherwise might be lost shall be boxed or bundled and**
% **plainly marked for identification. All finished ferrous surfaces shall be coated with a rust**
% **preventative compound, and all finished nonferrous metalwork and devices subject to**
% **damage shall be suitably wrapped or otherwise protected from damage during shipment.**

SECTION M - EVALUATION FACTORS FOR AWARD
(This section will be removed from the contract document)

M.1 52.232-15 PROGRESS PAYMENTS NOT INCLUDED (APR 1984)

A progress payments clause is not included in this solicitation, and will not be added to the resulting contract at the time of award. Bids conditioned upon inclusion of a progress payment clause in the resulting contract will be rejected as nonresponsive.

M.2 WBR 1452.225-82 NOTICE OF TRADE AGREEMENTS ACT EVALUATIONS --
BUREAU OF RECLAMATION (APR 1998)

In accordance with the Agreement on Government Procurement, as amended by the Uruguay Round Agreements Act (Pub. L. 103-465), and other trade agreements, The Trade Agreements Act applies to Bureau of Reclamation acquisitions. Reclamation will evaluate acquisitions at or above the dollar thresholds listed below without regard to the restrictions of the Buy American Act:

(a) Construction (\$7,143,000 or \$6,909,500 if NAFTA country construction materials are being offered);

(b) Supplies or services:

- (1) Mexico (\$53,150);
- (2) Canada (\$186,000);
- (3) Israel (\$186,000); and
- (4) All other designated countries (\$186,000).

M.3 WBR 1452.214-913 AWARD CRITERIA-APPLICATION OF FOREIGN DIFFERENTIAL
(SUPPLIES)--BUREAU OF RECLAMATION--LOWER COLORADO REGION
(NOV 1996)

Award will be made, in accordance with the Section L provision entitled, "Contract Award-Sealed Bidding" to the responsible, responsive bidder, whose bid is in compliance with all requirements of this solicitation and whose bid price is the lowest evaluated price after
% application of the foreign differential, **if required stated in the provision entitled 1452.225-901-Comparison of Offers--Application of the Buy American Act, North American Free Trade Agreement Implementation Act, the European Union Sanctions and U.S. Israel Free Trade Area Agreement--Supplies.** The determination of responsibility will be made in accordance with the Federal Acquisition Regulation, Subpart 9.1, Responsible Prospective Contractors.