

EAST BAY MUNICIPAL UTILITY DISTRICT

REQUEST FOR QUOTATION (RFQ) No. 2312 for FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS

Contact Person: John W. Grimes, Buyer II
Phone Number: (510) 287-0316
E-mail Address: John.Grimes@ebmud.com

For complete information regarding this project, see RFQ posted at <https://www.ebmud.com/business-center/materials-and-supplies-bids/current-requests-quotation-rfqs/> or contact the EBMUD representative listed above. Please note that prospective bidders are responsible for reviewing this site during the RFQ process, for any published addenda regarding this RFQ.

Bids Due
by
1:30 p.m.
on
April 5, 2023

All bid submissions hand delivered or mailed (USPS, FedEx, UPS, etc.) to the address or PO Box noted below and must be received no later than 1:30 p.m. on the bid due date.

<p>RESPONSE DELIVERED IN-PERSON, BY COURIER, OR PACKAGE DELIVERY SERVICE (UPS, FedEx, DHL, etc.)</p> <p>EBMUD–Purchasing Division 375 Eleventh Street, First Floor Oakland, CA 94607</p>	<p>RESPONSE DELIVERED BY MAIL (USPS) to:</p> <p>EBMUD–Purchasing Division P.O. Box 24055 Oakland, CA 94623</p>
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EAST BAY MUNICIPAL UTILITY DISTRICT

RFQ No. 2312

for

FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS

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I. STATEMENT OF WORK**A. SCOPE**

It is the intent of these specifications, terms, and conditions to describe requirement to furnish and deliver, f.o.b. the District's Main Wastewater Treatment Plant (MWWTP), 2020 Wake Avenue, Oakland, CA 94607, four (4) 1500-hp medium voltage induction motors to be used as replacement of existing main air compressor motors, as specified within.

East Bay Municipal Utility District (District) intends to award a contract to the lowest cost bidder(s) whose response meets the District's requirements.

B. BIDDER QUALIFICATIONS**1. Bidder Minimum Qualifications**

- a. Bidder, bidder's principal, or bidder's staff shall have been regularly engaged in the business of manufacturing similar or larger sized medium voltage motors for at least ten (10) years, as specified in Section 26 05 83.1. See Section 26 05 83.1 for additional requirements.
- b. Bidder shall be a certified or authorized manufacturer, dealer, or provider.
- c. Bidder shall possess all permits, licenses, and professional credentials necessary to supply product and perform services as specified under this RFQ.

C. SPECIFICATIONS

1. Following is SECTION 26 05 83.1.
2. Located in EXHIBIT E is Appendix A and Appendix B.

SECTION 26 05 83.1

MEDIUM VOLTAGE AC MOTORS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

Four (4) Medium Voltage (MV) induction motors shall be provided by a motor manufacturer (or supplier) as a standalone package and installed by the Installation Contractor to replace the existing Main Air Compressor (MAC) motors at Plant 1 and Plant 2. The MAC motors being replaced are as follows:

- a. MAC 1-1 (Plant 1)
 - b. MAC 1-2 (Plant 1)
 - c. MAC 2-1 (Plant 2)
 - d. MAC 2-2 (Plant 2)
2. Refer to Appendix A for photos of the motors and indication of equipment.
 3. Refer to Appendix B, for API 541 Motor Data Sheets and Factory Test Requirements.
 4. The motor configuration is slightly different for Plant 1 versus Plant 2 motors. However, the motors are of the same type and shall match the existing motor frame size.
 5. Prior to bidding the work the motor manufacturer shall coordinate with the East Bay Municipal Utility District (District) a site visit to measure and note the following existing conditions:
 - a. The main oil pump is located on the non-drive end of the motor and is driven by the motor shaft. Measurement of the extended shaft that drives the pump motor shall be taken to determine required extended shaft length.
 - b. The main power lead conductors shall exit the motor enclosure at the same location as existing with the length coordinated with the installation drawings for termination of the motor power lead conductors.
 - c. Measure the existing shaft diameter with appropriate and accurate measurement tools to determine shaft size. Coordinate with the District to shutdown equipment for measurement. Provide at least two weeks advanced notice.
 - d. The motor instrumentation terminal box shall be in the same location as the existing motor termination boxes.

6. Provide the motors with temperature and vibration monitoring instruments as specified herein.
7. The MAC motor shaft drives the auxiliary main oil lubrication pump. The rear shaft needs to extend from the motor to accommodate the main oil lube pump setup.

B. The existing MAC motors are Westinghouse “Life-Line D” with the following characteristics:

1. Type	LAC induction motor
2. Style	T4F18238
3. Model number	HSW-1
4. Enclosure	WPI
5. Voltage	4,160V, 3-phase, 60 hz
6. Number of Poles,	2
7. Nameplate output power	1250Hp
8. RPM	3574
9. Frame	6809-H
10. Lock KVA Code	G
11. Insulation Class	Class F insulation with Class B temperature rise
12. Service Factor	1.15

- C. This specification details the requirements for new 4160V, 1,500 hp, 3 phase, 60 Hz, premium efficiency indoor horizontal mounted MV AC motors.
- D. The motor shall include all necessary appurtenances needed to comply with the enclosure requirements detailed in this specification. This shall include filters, filter holders, flanges and fittings, vibration sensors, winding and bearing temperature sensors, space heaters, main and auxiliary terminal boxes.
- E. The motor and its appurtenances shall be compatible and interface with existing monitoring and control devices at the motor controller without the need to modify the control system. The requirements include all features, quantity, rating (except motor size), components, and wires as shown on drawing included in this specification. Additional requirements as shown in PART 2 of this specification.

- F. Site operating conditions are as follows:
1. 40 degrees C maximum /0 degrees C minimum air ambient temperature.
 2. 200 feet above sea level.
 3. 95% maximum relative humidity (non-condensing).
 4. +/-10% rated voltage with rated frequency.
 5. +/-5% rated frequency with rated voltage.
 6. +/-10% combined variation in frequency and voltage (sum of maximum values with frequency variation not to exceed 5%).
- G. The motor manufacturer shall provide the services of a qualified field technician to be available during installation and startup of the motors. At a minimum, two days (8 hours each) including travel time shall be provided for each motor.

1.2 REFERENCE

- A. NEMA Standards Publication No. MG 1-2006, "Motors and Generators".
- B. Motor and associated control components shall be designed, constructed, and tested in accordance with the latest applicable NEMA, ANSI, IEEE, and NEC Standards.
- C. American Petroleum Institute (API):
1. API 541, "Form-wound Squirrel Cage Induction Motors—375 kW (500 Horsepower) and Larger."
- D. American Society for Testing and Materials (ASTM):
1. ASTM A345-19, "Flat-Rolled Electrical Steels for Magnetic Applications."
 2. ASTM A536-84, "Ductile Iron Castings."
 3. ASTM E125-63, "Photographs for Magnetic Particle Indications on Ferrous Castings."
 4. ASTM E709-21, "Practice for Magnetic Particle Examination."
- E. Institute of Electrical and Electronics Engineers (IEEE):
1. IEEE 43, "Recommended Practice for Testing Insulation Resistance of Rotating Machinery."
 2. IEEE 85, "Test Procedure for Airborne Sound Measurement on Rotating Electrical Machinery."
 3. IEEE 112, "Test Procedure for Polyphase Induction Motors and Generators."

4. IEEE 522, "Guide for Testing Turn-to-Turn Insulation on Form Wound Stator Coils for AC Rotating Electric Machines."

F. International Organization for Standardization (ISO):

1. ISO 1940/1, "Mechanical Vibration -Balance Quality Requirements of Rigid Rotors."

1.3 QUALITY ASSURANCE

A. Codes and Standards:

1. ANSI/API Standard 541, Fourth Edition, June 2004, "Form-wound Squirrel-Cage Induction Motors- 500 Horsepower and Larger".
2. NEMA Standards Publication No. MG 1-2006, "Motors and Generators".
3. Motor and associated control components shall be designed, constructed, and tested in accordance with the latest applicable NEMA, ANSI, API, IEEE, and NEC Standards.

B. Experience:

1. The manufacturer of the motor shall have been in the business of manufacturing similar or larger size MV motors for a minimum period of ten (10) years. The 10 years shall have been in satisfactory industrial use prior to bid opening. The 10-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 10-year period. The manufacturer shall list at least two reference projects for which they provided MV motors of similar or larger size to this project.
 - a. When requested by the District, provide an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

C. Unwitnessed Factory Test:

1. All motors shall be factory tested in accordance with the industry standards means and methods. See PART 3 for additional requirements. All test results shall be recorded with motor model number and serial number associated with each motor. Each motor test result shall be submitted to the District for review and approval as part of the submittal package. The same test result shall be included with each motor delivered to the site.

D. Factory Acceptance Test (FAT) and Inspection:

1. All motors shall be factory inspected and witness tested by two (2) District staff. Prior to the FAT witness, the manufacturer shall provide unwitnessed motor test results and the proposed test procedures to the District for review and approval. The test results shall demonstrate the motor mechanical and electrical characteristics, technical and performance requirements in compliance with the requirements as stated in this specification and in accordance to API 541 standards. See PART 3 for additional requirements. For FAT witness requirements, see Appendix B, API 541 – Data Sheets, “Analysis, Shop Inspection, and Tests”.

1.4 SUBMITTALS

A. Submittal of motor data for acceptance shall include complete nameplate data and, in addition, the following for motors typical of the units furnished:

1. Catalog Data: Manufacturer's literature including data sheets for motor instruments (RTDs, vibration sensor)
2. Motor horsepower.
3. Voltage.
4. Phase.
5. Frequency.
6. Service factor.
7. Type and Frame Number.
8. Full-load speed (RPM).
9. Speed vs. torque and current curves at 4160V.
10. Motor efficiency:
 - a. Minimum guaranteed at full load.
 - b. Nominal (or average expected) at full load.
 - c. Nominal (or average expected) at 3/4 load.
 - d. Nominal (or average expected) at 1/2 load.
11. Full-load Amperes (at 4160V).
12. No-load Amperes (at 4160V).

13. Locked rotor current (at 4160V).
14. Insulation System Designation.
15. NEMA Design Letter.
16. Power Factor at 1/2, 3/4 and full load.
17. Enclosure type.
18. Guaranteed noise level in dB(A) when measured 3 feet from the machine.
19. Calculations for sizing of bearing, including under all load conditions.
20. Minimum characteristics for motor use with autotransformer type motor starters including type of speed/torque characteristic for which the motor is designed. The data shall also include the required tap settings at the autotransformer motor starter.
21. Total Net Weight of Motor (pounds).
22. Natural Harmonic Frequencies of Motor (for vibration analysis).
23. Space heater ratings (voltage and wattage) and installation data.
24. Coatings shall be in accordance with the manufacturer standard paint meeting severe duty marine grade ANSI 61 gray.
25. Drawings: Certified outline, mounting details, dimensions, location of main power leads and means for connecting to separately mounted termination box. Location of motor instrument termination box.
26. ANSI/API Standard 541 data sheets (quantity 4), with all applicable data fields completed by the manufacturer.
27. Submit prior to shipping:
 - a. Three certified set of hard copy drawings and provide one electronic set of either CAD and/or PDF format on disc with final binder.
 - b. Operation and Maintenance:
 - 1) Installation and Handling, including Lifting Instructions.
 - 2) Maintenance and Operation Instructions.
 - 3) Certified Outline and Installation Drawings.
 - 4) Parts List.
 - 5) Spare Parts List.

- 6) Certified Performance Curves as Tested.
 - 7) Certified Residual Unbalanced Report.
- c. Factory Performance Tests Results:
- 1) Certified motor performance test data for each motor, including complete data from motor standard running test.
 - 2) Curves showing motor performance characteristics:
 - a) Efficiency vs. Horsepower Output
 - b) Power Factor vs. Horsepower Output
 - c) Current vs. Horsepower Output
 - d) Power Input vs. Horsepower Output
 - e) RPM vs. Horsepower Output
 - f) Slip and full-load rpm
 - 3) Curves showing motor performance while starting:
 - a) Motor Torque vs. Percent Speed
 - b) Motor Current vs. Percent Speed
- d. Submit a testing plan for tests required in paragraph 3.1D.
- B. Provide one (1) PDF format on disc and five (5) printed copies of the electrical and mechanical drawings and all data listed in paragraph above for review.
- C. The drawings shall include mechanical dimensions, mechanical mounting information, electrical schematic, Nameplate drawings and wiring diagrams including motor space heater and instrumentation (winding and bearing Resistance Temperature Detectors (RTDs), and vibration sensor) terminal box layout and terminal markings.
- D. Operation and maintenance manuals shall include the following information:
1. Instruction books and/or leaflets.
 2. Routine checks and scheduled maintenance.
 3. Testing and troubleshooting.
 4. Recommended renewal parts list.

- E. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review. Clearly mark the literature with the materials and options being provided to illustrate conformance with the specification details.
- F. Accuracy, coordination, and completeness of submittals shall be the sole responsibility of the motor manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. After completion of factory acceptance testing of the motor, delivery shall be coordinated with the District to determine shipping to jobsite within the allowable time.
- B. Upon delivery of the motor at the job site, the manufacturer or authorized representative shall visit the site and inspect the motor thoroughly for damage that may have occurred during loading and shipping and any mechanical defects observed prior to unloading the unit shall be documented and repaired or replaced at the discretion of the District. All repair or replacement costs associated with the defects or damage, including materials, labor, shipping, lodging, transportation, and meal costs for the manufacturer representative to travel to the site to inspect, repair, or replace the motor shall be paid by the manufacturer.
- C. Storage: Manufacturer shall provide procedures for motor storage to the District and protection requirements and schedule for periodic bearing lubrication as applicable prior to motor delivery to site.
- D. Handling: Manufacturer shall provide procedures for loading, unloading, and maintenance of the motor to the District prior to motor delivery to site.
- E. Bearings:
 - 1. Grease
 - a. Completely fill grease lubricated cavities with the lubricant specified in the manufacturer's installation, operation, and maintenance manual. Remove the drain plug and fill cavity with grease until grease begins to purge from the drain opening.
 - b. Inspect grease monthly for moisture and oxidation by purging a small quantity of grease through the drain. If any contamination is present, completely remove and replace the grease.
 - 2. Oil
 - a. Oil lubricated motors are to be shipped without oil. Upon delivery of the motor, fill the oil sumps to the maximum capacity indicated on the oil chamber sight gauge window with the oil specified in the manufacturer's installation, operation, and maintenance manual.

- b. Do not move the motor with oil in the reservoir. Drain oil before moving to prevent sloshing.
- c. Apply new thread sealant, Gasoila No. SS08 or equal, to the threads of the drain plug and inside the drain hole each time oil is drained and refilled.

1.6 WARRANTY

- A. All equipment furnished under this section shall be warranted by the equipment manufacturer for a period of two (2) years following acceptance by the district.

PART 2 - PRODUCTS

2.1 GENERAL PERFORMANCE REQUIREMENTS

- A. Each motor shall be designed and constructed in accordance with the following requirements:

Horsepower	1500
Type	LAC Induction Motor
RPM	3600
Number of Poles	2
Operating voltage	4160V, 3 phase, 60 Hz
Service factor	1.15 @ 105°C
Power Factor	0.936 or higher
Nominal Efficiency	95% or higher at 100% load
Locked Rotor Current	6.3 or less x FLA
Lock Rotator KVA Code	G
Duty	Continuous 90°C @ 1.15 SF
Ambient Temperature	40°C
Rated Torque at Design Speed, 1.0 S.F.	2188 ft. lb.
Enclosure	NEMA WP I
Frame	6809-H
Weight	To be confirmed by manufacturer
Minimum Locked Rotor Torque	2150 ft. lb.
Sound Level (Maximum)	85 dB(A) @ 3 feet, at no-load, Measurement.
Starting Method	Reduced Voltage Autotransformer
Insulation Rating	Class F to operate at Class B rise
Transient Reactance	0.140 pu
Driven Load Inertia (WR2) at Start	520 lb-ft ²
Min. Breakaway Torque at 2413 volts	600 ft. lb.
No Load full speed Torque	To be confirmed by manufacturer

(2.1A Continued)

Approval

UL and CSA

B. Starting Method:

1. The motor shall accelerate the load to full speed within 25 seconds or less when started by a reduced voltage autotransformer controller at 65%, with closed inlet guide vanes.

C. Motor Starting Capabilities:

Minimum Starting Capabilities	Number of Starts
Consecutive 2-second jogging applications 10 seconds apart	3
Consecutive starts with the motor coasting to rest between starts. First start is a cold start.	2
Consecutive starts with the motor coasting to rest and remaining idle for 20 minutes. First start is a cold start.	3
Evenly spaced starts in first hour prior to continuous running. First start is a cold start.	3

D. Physical Characteristics:

1. All external interface connections to equipment supplied by others shall be inch size conforming to American National Standard dimensions.
2. All parts shall be designed for easy access, inspection, disassembly, and repairs.
3. Motor shaft run-out, shall be less than 0.002 inch or better.

E. Efficiency:

1. The Guaranteed Efficiency at full load shall have been determined to be equal to or greater than that specified above for this design of motor.

2. The preferred method for determining motor efficiency is with IEEE Std. 112, Method B. IEEE methods E & F will be acceptable if manufacturer does not have a dynamometer to perform the tests for the size of the motor specified. Values for no-load losses and full-load losses at 25%, 50%, 75%, and 100% load shall be submitted for approval prior to the fabrication of the motor. The following losses shall be included in the values:

No-Load:	Full-Load:
Windage Losses	Rotor I ² R Loss
Friction Losses	Stator I ² R Loss
Core Losses	Stray Load Loss

3. Minimum Efficiency at full load and Nominal (or Average Expected) Efficiency at full load and, at 3/4 load, and at 1/2 load is required on the submittals. This information shall be included on the label of the furnished motor. The minimum efficiency shall include the bearing losses at the design load condition and power losses.

F. Coils and Insulation System

1. The motor shall have non-hygroscopic insulation systems, including leads and connections to the windings. The thermal rating of the coil connections shall be equal to that of the coil.
2. The turn insulation materials shall be selected for the individual machine design on the basis expected surge levels, operating temperature, and system capability.
3. Mica composite insulation shall be used for ground insulation. The coils shall receive a protective armor of heavy glass tape for protection against mechanical shock and abrasion.
4. The coils shall be inserted into the stator slots and the end connections brazed and taped. Coil lock bracing shall be employed to support the coils and rigidly consolidate the entire structure. The vacuum pressure impregnation process completely fills voids in the coils as the resin penetrates the insulation and connection tapes, assuring a solid, homogeneous structure of superior thermal and mechanical strength.
5. The stator coils shall be secured tightly in their slots. Coil ends shall be adequately braced and supported by carbon steel insulated rings to prevent insulation cracking and fatigue as a result of motion during operation and starting. Windings shall withstand the starting duties specified in section 2.1.C of this section of the specification with a life of at least 10,000 full-voltage starts.
6. The motor shall have Class F insulation or better.

7. The stator insulation system shall be highly moisture and chemical resistant. All parts used to form the insulation system shall be non-hygroscopic. The insulation integrity shall be maintained while withstanding the design operating forces, and thermal stress at Class F temperatures without damage.
8. Motor insulation systems shall be impervious to all commonly encountered contaminants.
9. The motor shall have a sealed insulation system meeting the requirements of NEMA std MG 1 2.27.2 and withstanding the test criteria for NEMA MG 1 12.62 and 20.18.
10. Stator leads with rubber-based insulation such as EPR shall be jacketed, taped, or sleeved with an oil resistant material such as PVC.
11. All medium voltage bus work used in the motor or motor terminal box shall be copper with plated joints, fully insulated and supported with epoxy insulators.

G. Mechanical Construction

1. Main auxiliary boxes shall be furnished/installed with two support legs at outer corners if required.
2. Enclosure Requirements
 - a. Enclosure shall be of fabricated steel or cast-iron construction and shall have a minimum thickness of 1/8 inch.
 - b. Enclosure shall be Weather-Protected I (WP-I) conforming to NEMA Standards MG-1.25. In addition, all openings giving direct access to live metal or rotating parts (except smooth rotating surfaces) shall be limited in size by the structural parts or by baffles, grilles, expanded metal or other means to prevent accidental contact with hazardous parts. Opening giving direct access to such live or rotating parts shall not permit the passage of a cylindrical rod 0.25 inch in diameter.
 - c. Provide stainless steel screens and air filters with suitable holders for inlet and galvanized steel screen for outlet air passages.
 - d. Filter housing shall be removable.

H. Rotor/Stator Construction

1. The rotor bars and end rings shall be copper or copper alloy (no substitution) with forged copper end rings. Filler materials for copper alloy rotor construction shall conform to ANSI/AWS A5.8 standard with a minimum of 40 percent silver content. Butt joints are not acceptable. Inert gas welding, controlled temperature multi-torch full circle gas or induction brazing shall be used. End rings and bars shall be replaceable without damage to air passages or lamination. The rotor bars shall be swaged, and the core shall be held together by through-bolts and end plates.

2. Stator core shall be built-up from laminations of low loss high permeability type steel. These laminations are to be deburred and insulated to reduce eddy current losses.
 3. Stator core lamination plate shall be of at least C-5 or C-6 quality per ASTM A345. C-3 shall not be used, even along with C-5 or C-6. The stator core shall be capable of withstanding winding burn-out temperatures of 1000°F without damage or loosening. Temperature detectors shall fit in the middle of the slot between top and bottom coils.
 4. All connections shall be brazed with silver brazing alloy. The stator shall be braced and supported to eliminate any detrimental winding movement.
 5. The rotor and shaft must be free to move axially up to 0.25" in either direction from the neutral disconnected operating position. When operating disconnected, the rotor position should settle near the midpoint of the axial movement limits.
- I. Temperature Rise:
1. The stator insulation system shall be Class F or better, with all components rated for total Class F temperature. Maximum temperature rise shall be 80 degrees C @ 1.0 SF and 90°C @ 1.15 SF maximum as measured by the RTD method when operating continuously at the maximum horsepower (nameplate horsepower).
- J. Motor Bearings:
1. The motor shall be equipped with two end shield supported bearings.
 2. The bearings shall be Babbitted sleeve bearings with splash lubrication provided from static oil reservoirs. Sight glasses shall be provided with fill and drain ports.
 3. Motor shaft seals shall exhibit a zero leakage rate. Weeping of oil from the seals shall not be permitted.
- K. Stator Winding and Bearing Thermal and Vibration Protection:
1. Provide twelve (12) stator RTDs (four per phase shall be furnished). The RTDs shall be 100-ohm platinum at 32°F, having a minimum width of 0.25 inches and length of 24 inches. Units shall be embedded in the winding slots evenly spaced across the circumference of the stator. Placement of the units shall be in strict accordance with NEMA MG 1-20.63. Embedded winding RTD wiring shall be minimum #18 AWG. If standard RTD with #18 AWG wiring is not available motor manufacturer shall remove manufacturer supplied small gauge wires and braze #18 AWG wires.
 2. Provide four (4) bearing RTDs (two per front and rear bearing shall be furnished). The resistance and material of the RTDs shall be 100-ohm platinum.
 3. Provide 1/4-28 tap on each bearing housing for the installation of a tri-axial accelerometer-type vibration sensors (Wilcoxon Model 993A).

L. Space Heaters:

1. Motor space heaters shall be provided so as to keep the motor windings 5 to 10 degrees C above the dew point during de-energized conditions. The space heaters shall be 240V devices, 1 phase, 400 Watt, with leads brought to a separate terminal box. Heaters with exposed elements are prohibited.
2. The heaters shall maintain temperature of the motor windings approximately 10°C above ambient during de-energized conditions. Calculations and/or type test results measurements shall be submitted to verify the above requirements.

M. Main Power Leads:

1. The main power leads from the motor shall have sufficient length to terminate in a separately mounted motor termination box provided by the Installation Contractor. The motor power leads shall be protected by means of fabricated steel or cast-iron construction to be compatible with the motor enclosure specified, sized for the power conductors.
2. Auxiliary terminal boxes: Auxiliary terminal boxes shall be provided for termination of stator RTD leads and space heater leads. The devices shall be wired to the auxiliary terminal box and terminated on suitable terminal blocks. The terminal box shall be constructed of pressed steel sheets.
3. Motor standoffs shall have solderless lug terminals with at least two holes. All cable terminations shall be made using stress cones. Two stainless steel grounding pads shall be furnished and located diagonally apart on each side of the motor frame. All terminators shall be provided ready for installation. Terminations shall be rated for 105°C.
4. Location of the main power lead terminal box shall be in the same location as existing.

N. Balancing and Vibration:

1. Motors shall receive special dynamic balancing in accordance with the requirements of NEMA MG 1 Part 7, based on rigid mounting except use 0.08 to 0.10 in/sec peak. Vibration readings shall be measured and recorded in the factory at the upper and lower bearing housings during motor performance test or during separate test.
2. Vibration readings shall be taken and recorded by manufacturer during factory testing and by motor manufacturer's representative during field performance tests.

O. Noise Level:

1. Noise Level shall be per section 2.1.

2. Motor noise rating shall be determined in accordance with the latest revision of IEEE Standard 85, "Test Procedure for Air-borne Noise Measurements on Rotating Electric Machinery," with readings taken at 3 feet from major motor surfaces.
3. A motor factory noise test is required for the motors during factory performance test. For all motors, noise levels shall be measured with the motor running at full speed.
4. The motor manufacturer shall make all necessary modifications to the motors to ensure that this noise level requirement is met.

P. Wiring / Terminations:

1. Control wire shall be type SIS, No. #14 minimum.
2. All control wiring shall be terminated in spade-type terminations.
3. Connections to field wiring shall be terminated on suitably rated terminal blocks located in the auxiliary terminal box. The terminal blocks shall be marked in accordance with the wiring diagrams.
4. All control wires shall be marked with slip-on sleeve-type wire markers numbered in accordance with the wiring diagrams.

Q. Nameplates:

1. A stainless-steel nameplate shall be provided on the motor (for each motor). The nameplate shall contain the information required by NEMA Standard MG 1-20.60.

R. Finish:

1. Coating and painting shall be in accordance with the manufacturer standard paint meeting severe duty marine grade ANSI 61 gray.

S. Acceptable Manufacturers:

1. TECO - Westinghouse
2. Nidec
3. Toshiba
4. WEG
5. General Electric
6. Approved equal

PART 3 - EXECUTION

3.1 FACTORY TESTING

- A. Production Tests: All motors shall be tested in accordance with API 541 Standard and NEMA MG 1-20 (standard production test) plus full commercial testing per manufacturer and NEMA MG 1-Part 7 (vibration test). In addition, tests shall be performed that provide values for current balance at 50% rated voltage and speed, efficiency at 100%, 75% and 25% of full load, and power factor at 100%, 75%, 50% and 25% of full load.
- B. All motors shall be tested with representative reduced voltage autotransformer starter with the required tap setting.
- C. General Testing Requirements
1. All tests that require energization of the motor shall be done at rated voltage and frequency.
 2. The manufacturer shall pay, arrange, and schedule for two District representative to be present for the testing of the motor at the manufacturer's factory. The District representatives shall be permitted to observe all tests and to check and record all instrument readings providing compliance with the design parameters. A minimum of one month advance written notice is required. Bid price shall include airfare, local transportation, meals, and separate lodging for the District representatives. Meals and lodging rates shall comply with the current Federal Rates for the Continental USA. The rates are available from the following website:

<http://www.gsa.gov>, then click on per diem rates.
- D. Complete Commercial
1. The motor shall be given the most complete commercial tests the manufacturer provides to demonstrate that it is free from mechanical and electrical defects. These tests shall be conducted in accordance with these specifications and applicable portions of API 541, IEEE 43, IEEE 112, IEEE 439 and NEMA MG 1. These tests shall include but not be limited to:
 - a. Manufacturer's standard complete tests.
 - b. Bearing Dimensional and Alignment Checks Before Tests.
 - c. Bearing Dimensional and Alignment Checks After Tests.
 - d. Measurement of no-load current (each phase) and speed.
 - e. Locked Rotor.
 - f. Sound Pressure Level Test.

- g. Measurement of stator winding resistance.
 - h. A DC high potential test on the stator.
 - i. Measurement of the one minute and ten-minute insulation resistance test of the stator with a 2500 VDC (minimum) dc megohmmeter, and a polarization index test per IEEE 43.
 - j. Measurement of vibration (at no load is acceptable) after motor temperature has stabilized.
 - k. A determination, by calculation, of locked rotor current.
 - l. Efficiency in accordance with IEEE 112.
 - m. Component Balance.
 - n. Final Premium Balance.
 - o. Unbalance response.
 - p. Heat Run.
 - q. Motor noise rating shall have been determined in accordance with the latest revision of IEEE Standard 85, "Test Procedure for Air-borne Noise Measurements on Rotating Electric Machinery," with readings taken at 3 feet from major motor surfaces.
 - r. Surge Comparison Test.
2. The following torsional tests shall be completed:
- a. Rotor critical speed
 - b. Fully dimensioned shaft profile
 - c. Shaft and key dimensions (where coupling hub mounts) and key-slot hub length
 - d. Motor (rotor) shaft inertia WR^2 (mass moment of inertia)
 - e. KT (torsional stiffness) and specific location on shaft from where vendor calculated it from
 - f. Motor transient torque start-up curves
 - g. Motor transient start-up time curves
 - h. Tensile yield strength of shaft $R_e=R_p/2$ (lower than the ultimate tensile yield strength) & shaft material

- i. Tensile yield strength of key $Re=Rp_{0,2}$ (lower than ultimate tensile yield strength) & key material
 - j. Shaft shear modulus (modulus of rigidity)
3. The motor shall be operated for a minimum of 1 hour after the bearing temperatures have stabilized. Stable temperature is defined as no more than a 1°C change in 15 minutes.
4. The following basic requirements shall be met for all running tests:
 - a. Tests shall be made on the fully assembled motor.
 - b. All wiring, protective, and control devices shall be checked, and adjustments made as required.
5. During the running test, the mechanical operation of all equipment being tested, and test instrumentation shall be satisfactory. Unfiltered and filtered radial and axial vibration measurements shall not exceed the limits specified in NEMA MG 1-Part 7 except 0.08 in/sec peak and shall be recorded throughout the operating speed range.
6. When axial vibration readings are taken directly on the bearing caps or shaft with hand-held instruments, they shall be taken in both the x and y planes.
7. Axial, radial, and tangential vibration readings shall be recorded at 15-minute intervals for a minimum of one hour after temperature stabilization.
8. If replacement or modification of bearings or seals or dismantling to replace or modify other parts is required to correct mechanical or performance deficiencies, the initial test will not be acceptable, and the final specified tests shall be run after these replacements or corrections are made. During this run, rated voltage, stator amps, watts, and vibration shall be measured to confirm the correction. When only the seals are replaced then only a no-load test is required.
9. Facilities shall be in operation throughout the test to ensure against entrance of oil into the motor. Any violation of this condition requires termination of the test until correction is made.
10. The motor manufacturer shall maintain a complete, detailed log and plots of all final tests and shall submit the required number of copies to the District, including data for bearing temperatures, motor balancing, critical speeds, and vibration measurements taken over the operating speed range and the spectrum analysis. A description of the test instrumentation and certified copies of the instrument calibrations shall be available for the District's review.
11. Vibration shall be measured/recorded using contact type shop probes or bearing housing mounted velocity transducers.

12. The vibration characteristics determined by the use of the instrumentation specified in this section shall serve as the basis for acceptance or rejection of the machine. Manufacturer may correct during District witnessed test period or pay for and make provisions for additional witness test.
13. Current, voltage and power in all three phases shall be measured and recorded, for all running and locked-rotor tests.
14. All windings and bearing temperature measurements shall be made using permanently installed detectors.
15. Unless otherwise specified, measurements of 13 and 14 above shall be recorded every 15 minutes.
16. The motor manufacturer shall provide three (3) certified copies of factory test reports to the District.
17. Motor shall not be shipped until the District has approved the factory test reports.

3.2 FIELD TESTING

1. The manufacturer shall provide the services of a qualified motor field services technician to verify the field installation of the motor and coupling to the existing air compressor prior to energizing and testing the motor.
2. The motor shall be tested to verify the following parameters are met:
 - a. Sound Level (Maximum) 85 dB(A) @ 3 feet, at no-load
 - b. Locked (Starting) Rotor Current 6.3 or less x FLA
 - c. The motor shall accelerate the compressor to full speed within 25 seconds or less.
 - d. The maximum temperature rise shall be 80 degrees C @ 1.0 SF and 90°C @ 1.15 SF maximum as measured by the RTD method. Each air compressor is to be loaded as needed to achieve the target Service Factor values. Coordinate with the District prior to operation of the air compressors during the field test to coordinate process requirements for loading as needed during the field test.
 - e. Vibrations shall not exceed 0.10 in/sec peak. Vibration readings shall be measured and recorded at the upper and lower bearing housings during full load testing.

END OF SECTION

All products shall be in new and unused condition and shall be of the most current and up to date model.

D. FAILURE TO MEET SPECIFICATIONS

In the event any shipment or shipments of a Contractor’s product do not meet the specification or delivery requirements, the District may reject the shipment or shipments and, at its option, may purchase this material from any supplier on the open market who can meet the District’s specification requirements, or the District may demand immediate replacement by Contractor of the non-conforming product. Any costs over and above the original contract price will be charged back to the Contractor. In addition, Contractor shall bear the costs of removal and disposition for any delivery which fails to conform to the specifications.

II. CALENDAR OF EVENTS

EVENT	DATE/LOCATION
RFQ Issued	March 1, 2023
Deadline For Submission of Questions	March 14, 2023
Response Due	April 5, 2023 by 1:30 p.m. At this time all bids will be opened publicly in the EBMUD Board Room at 375 Eleventh St., Oakland, CA 94607*
Anticipated Contract Start Date	May 15, 2023

Note: All dates are subject to change **by District**.

Following the opening a list of submitted pricing will be posted to:

<https://www.ebmud.com/business-center/materials-and-supplies-bids/>

Bidders are responsible for reviewing <https://www.ebmud.com/business-center/materials-and-supplies-bids/current-requests-quotation-rfqs/> for any published addenda. Hard copies of addenda will not be mailed out.

III. DISTRICT PROCEDURES, TERMS, AND CONDITIONS

A. RFQ ACCEPTANCE AND AWARD

1. RFQ responses will be evaluated to determine that they are responsive, responsible, and that they meet the specifications as stated in this RFQ.

2. The District reserves the right to award to a single or to multiple Contractors, dependent upon what provides the lowest overall cost to the District.
3. The District has the right to decline to award this contract or any part of it for any reason.
4. Any specifications, terms, or conditions, issued by the District, or those included in the bidder's submission, in relation to this RFQ, may be incorporated into any purchase order or contract that may be awarded as a result of this RFQ.
5. Award of contract: The District reserves the right to reject any or all proposals, to accept one part of a proposal and reject the other, unless the bidder stipulates to the contrary, and to waive minor technical defects and administrative errors, as the interest of the District may require. Award will be made, or proposals rejected by the District as soon as possible after bids have been opened.

B. BRAND NAMES, APPROVED EQUIVALENTS, DEVIATIONS, AND EXCEPTIONS

Any references to manufacturers, trade names, brand names, and/or catalog numbers are intended to be descriptive, but not restrictive, unless otherwise stated, and are intended to indicate the quality level desired. Bidders may offer an equivalent product that meets or exceeds the specifications.

The District reserves the right to be the sole judge of what shall be considered equal and/or acceptable and may require the bidder to provide additional information and/or samples. If the bidder does not specify otherwise, it is understood that the brand and/or product referenced in this RFQ will be supplied.

Taking exception to the RFQ, or failure on the part of the bidder to comply with all requirements and conditions of this RFQ, may subject the RFQ response to rejection. If no deviations are shown, the bidder will be required to furnish the material exactly as specified. The burden of proof of compliance with the specifications will be the responsibility of the bidder.

This RFQ is subject to acceptance only on the terms and conditions stated in this RFQ. Any additional or different terms and conditions proposed by the bidder are hereby rejected and shall be of no force or effect unless expressly assented to in writing by the District.

RFQ responses based on equivalent products must:

1. Use Exhibit A "Exceptions, Clarification and Amendments" to clearly describe the alternate offered and indicate specifically how it differs from the product specified in this RFQ.

2. Include complete descriptive literature and/or specifications as proof that the proposed alternate will be equal to or better than the product named in this RFQ.

C. PRICING

1. All prices are to be F.O.B. destination. Any freight/delivery charges are to be included.
2. All prices quoted shall be in United States dollars.
3. Price quotes shall include any and all payment incentives available to the District.
4. Bidders are advised that in the evaluation of cost, if applicable, it will be assumed that the unit price quoted is correct in the case of a discrepancy between the unit price and extended price.

D. NOTICE OF INTENT TO AWARD AND PROTESTS

At the conclusion of the RFQ response evaluation process, all entities who submitted a bid package will be notified in writing by e-mail or USPS mail with the name of the Bidder being recommended for contract award. The document providing this notification is the Notice of Intent to Award.

Protests must be in writing and must be received no later than seven (7) workdays after the District issues the Notice of Intent to Award. The District will reject the protest as untimely if it is received after this specified time frame. Protests will be accepted from bidders or potential bidders only.

If the protest is mailed and not received by the District, the protesting party bears the burden of proof to submit evidence (e.g., certified mail receipt) that the protest was sent in a timely manner so that it would be received by the District within the RFQ protest period.

Bid protests must contain a detailed and complete written statement describing the reason(s) for protest. The protest must include the name and/or number of the bid, the name of the firm protesting, and include a name, telephone number, email address and physical address of the protester. If a firm is representing the protester, they shall include their contact information in addition to that of the protesting firm.

Protests must be mailed, hand delivered, or emailed to the Manager of Purchasing, Mailstop 102, East Bay Municipal Utility District, 375 Eleventh Street, Oakland, CA 94607 or P.O. Box 24055, Oakland, California 94623. Facsimile and electronic mail

protests must be followed by a mailed or hand delivered identical copy of the protest and must arrive within the seven workday time limit. Any bid protest filed with any other District office shall be forwarded immediately to the Manager of Purchasing.

The bid protester can appeal the determination to the requesting organization's Department Director. The appeal must be submitted to the Department Director no later than five workdays from the date which the protest determination was transmitted by the District, to the protesting party. The appeal shall focus on the points raised in the original protest, and no new points shall be raised in the appeal.

Such an appeal must be made in writing and must include all grounds for the appeal and copies of the original protest and the District's response. The bid protester must also send the Purchasing Division a copy of all materials sent to the Department Director. The Department Director will make a determination of the appeal and respond to the protester by certified mail in a timely manner. If the appeal is denied, the letter will include the date, time, and location of the Board of Directors meeting at which staff will make a recommendation for award and inform the protester it may request to address the Board of Directors at that meeting.

The District may transmit copies of the protest and any attached documentation to all other parties who may be affected by the outcome of the protest. The decision of the District as to the validity of any protest is final. This District's final decision will be transmitted to all affected parties in a timely manner.

E. METHOD OF ORDERING

1. Written POs may be issued upon approval of written itemized quotations received from the Contractor.
2. POs and payments for products and/or services will be issued only in the name of Contractor.
3. Any and all change orders shall be in writing and agreed upon, in advance, by Contractor and the District.

F. TERM / TERMINATION

1. The term of the contract, which may be awarded pursuant to this RFQ, will be approximately two (2) years.
2. This Agreement may be terminated for convenience by the District provided the Contractor is given written notice of not less than 30 calendar days. Upon such termination, the District shall pay the Contractor the amount owing for the products ordered and satisfactorily received by the District. This shall be the sole

and exclusive remedy to which the Contractor is properly entitled in the event of termination by the District.

3. This Agreement may be terminated for cause at any time, provided that the District notifies Contractor of impending action.

G. WARRANTY

1. For any contract awarded pursuant to this RFQ, Contractor expressly warrants that all goods furnished will conform strictly with the specifications and requirements contained herein and with all approved submittals, samples and/or models and information contained or referenced therein, all affirmations of fact or promises, and will be new, of merchantable quality, free from defects in materials and workmanship, including but not limited to leaks, breaks, penetrations, imperfections, corrosion, deterioration, or other kinds of product deficiencies. Contractor expressly warrants that all goods to be furnished will be fit and sufficient for the purpose(s) intended. Contractor expressly warrants that all goods shall be delivered free from any security interest, lien, or encumbrance of any kind, and free from any claim of infringement, copyright or other intellectual property violation, or other violation of laws, statutes, regulations, ordinances, rules, treaties, import restrictions, embargoes or other legal requirements. Contractor guarantees all products and services against faulty or inadequate design, manufacture, negligent or improper transport, handling, assembly, installation or testing, and further guaranties that there shall be strict compliance with all manufacturer guidelines, recommendations, and requirements, and that Contractor guaranties that it will conform to all requirements necessary to keep all manufacturer warranties and guarantees in full force and effect. These warranties and guarantees are inclusive of all parts, labor, and equipment necessary to achieve strict conformance, and shall take precedence over any conflicting warranty or guarantee. These warranties and guaranties shall not be affected, limited, discharged, or waived by any examination, inspection, delivery, acceptance, payment, course of dealing, course of performance, usage of trade, or termination for any reason and to any extent. In the absence of any conflicting language as to duration, which conflicting language will take precedence as being more specific, Contractor's aforesaid warranties and guarantees shall be in full force and effect for a period of two years from the date of acceptance by the District but shall continue in full force and effect following notice from District of any warranty or guarantee issue, until such issue has been fully resolved to the satisfaction of District.

H. INVOICING

1. Following the Districts acceptance of product(s) meeting all specified requirements, and/or the complete and satisfactory performance of services, the District will render payment within thirty (30) days of receipt of a correct invoice.
2. The District shall notify Contractor of any invoice adjustments required.
3. Invoices shall contain, at a minimum, District purchase order number, invoice number, remit to address, and itemized products and/or services description.
4. The District will pay Contractor in an amount not to exceed the total amount quoted in the RFQ response.

IV. RFQ RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION

A. DISTRICT CONTACTS

All contact during the competitive process is to be through the contact listed on the first page of this RFQ. The following persons are to be contacted only for the purposes specified below.

TECHNICAL SPECIFICATIONS:

Attn: John Law, Assistant Engineer

EBMUD-Wastewater Engineering Div./Wastewater Engineering Dept.

E-Mail: john.law@ebmud.com

PHONE: (510) 287-7186

CONTRACT EQUITY PROGRAM:

Attn: Contract Equity Office

PHONE: (510) 287-0114

AFTER AWARD:

Attn: John Law, Assistant Engineer

EBMUD-Wastewater Engineering Div./Wastewater Engineering Dept.

E-Mail: john.law@ebmud.com

PHONE: (510) 287-7186

B. SUBMITTAL OF RFQ RESPONSE

1. Responses must be submitted in accordance with Exhibit A – RFQ Response Packet, including all additional documentation stated in the “Required Documentation and Submittals” section of Exhibit A.

2. Late and/or unsealed responses will not be accepted.
3. RFQ responses submitted via electronic transmissions will not be accepted. Electronic transmissions include faxed RFQ responses or those sent by electronic mail (“e-mail”).
4. All RFQ responses must be SEALED and received by 1:30 p.m. on the due date specified in the Calendar of Events. Any RFQ response received after that time/date, or at a place other than the stated addresses, cannot be considered and will be returned to the bidder unopened. The EBMUD mailroom and Purchasing Division timestamp shall be considered the official timepiece for the purpose of establishing the actual receipt of RFQ responses.
5. RFQ responses are to be addressed/delivered as follows:

Mailed (USPS):

East Bay Municipal Utility District
FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS
RFQ No. 2312
EBMUD–Purchasing Division
P.O. Box 24055
Oakland, CA 94623

Hand Delivered, delivered by courier or package delivery service (UPS, FedEx, DHL, etc.):

East Bay Municipal Utility District
FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS
RFQ No. 2312
EBMUD–Purchasing Division
375 Eleventh Street, First Floor
Oakland, CA 94607

Bidder's name, return address, and the RFQ number and title must also appear on the mailing package.

6. All costs required for the preparation and submission of an RFQ response shall be borne by the bidder.
7. California Government Code Section 4552: In submitting an RFQ response to a public purchasing body, the bidder offers and agrees that if the RFQ response is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code), arising from

purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the RFQ response. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

8. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act.
9. The RFQ response shall remain open to acceptance and is irrevocable for a period of one hundred eighty (180) days, unless otherwise specified in the RFQ documents.
10. It is understood that the District reserves the right to reject any or all RFQ responses.
11. RFQ responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFQ response or part thereof so marked. RFQ responses submitted in response to this RFQ may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.



EXHIBIT A
RFQ RESPONSE PACKET
RFQ No. 2312 – FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS

To: The EAST BAY MUNICIPAL UTILITY District (“District”)

From: _____

(Official Name of Bidder)

RFQ RESPONSE PACKET GUIDELINES

- **BIDDERS ARE TO SUBMIT ONE (1) ORIGINAL HARDCOPY RFQ RESPONSE WITH ORIGINAL INK SIGNATURES, AND ONE (1) COPY CONTAINING THE FOLLOWING IN THEIR ENTIRETY:**
 - **EXHIBIT A – RFQ RESPONSE PACKET**
 - **INCLUDING ALL REQUIRED DOCUMENTATION AS DESCRIBED IN “EXHIBIT A-REQUIRED DOCUMENTATION AND SUBMITTALS”**
- **ALL PRICES AND NOTATIONS MUST BE PRINTED IN INK OR TYPEWRITTEN; NO ERASURES ARE PERMITTED; ERRORS MAY BE CROSSED OUT AND CORRECTIONS PRINTED IN INK OR TYPEWRITTEN ADJACENT AND MUST BE INITIALED IN INK BY PERSON SIGNING THE RFQ RESPONSE.**
- **BIDDERS THAT DO NOT COMPLY WITH THE REQUIREMENTS, AND/OR SUBMIT AN INCOMPLETE RFQ RESPONSE MAY BE SUBJECT TO DISQUALIFICATION AND THEIR RFQ RESPONSE REJECTED IN TOTAL.**
- **IF BIDDERS ARE MAKING ANY CLARIFICATIONS AND/OR AMENDMENTS, OR TAKING EXCEPTION TO ANY PART OF THIS RFQ, THESE MUST BE SUBMITTED IN THE EXCEPTIONS, CLARIFICATIONS, AND AMENDMENTS SECTION OF THIS EXHIBIT A – RFQ RESPONSE PACKET. THE DISTRICT, AT ITS SOLE DISCRETION, MAY ACCEPT AMENDMENTS/EXCEPTIONS, OR MAY DEEM THEM TO BE UNACCEPTABLE, THEREBY RENDERING THE RFQ RESPONSE DISQUALIFIED.**
- **BIDDERS SHALL NOT MODIFY DISTRICT LANGUAGE IN ANY PART OF THIS RFQ OR ITS EXHIBITS, NOR SHALL THEY QUALIFY THEIR RFQ RESPONSE BY INSERTING THEIR OWN LANGUAGE OR FALSE CLAIMS IN THEIR RESPONSE. ANY EXCEPTIONS AND CLARIFICATIONS MUST BE PLACED IN THE “EXCEPTIONS/ CLARIFICATIONS” PAGE, NOT BURIED IN THE PROPOSAL ITSELF.”**



BIDDER INFORMATION AND ACCEPTANCE

1. The undersigned declares that all RFQ documents, including, without limitation, the RFQ, Addenda, and Exhibits, have been read and that the terms, conditions, certifications, and requirements are agreed to.
2. The undersigned is authorized to offer, and agrees to furnish, the articles and services specified in accordance with the RFQ documents.
3. The undersigned acknowledges acceptance of all addenda related to this RFQ.
4. The undersigned hereby certifies to the District that all representations, certifications, and statements made by the bidder, as set forth in this RFQ Response Packet and attachments, are true and correct and are made under penalty of perjury pursuant to the laws of California.
5. The undersigned acknowledges that the bidder is, and will be, in good standing in the State of California, with all the necessary licenses, permits, certifications, approvals, and authorizations necessary to perform all obligations in connection with this RFQ and associated RFQ documents.
6. It is the responsibility of each bidder to be familiar with all of the specifications, terms, and conditions and, if applicable, the site condition. By the submission of an RFQ response, the bidder certifies that if awarded a contract it will make no claim against the District based upon ignorance of conditions or misunderstanding of the specifications.
7. Patent indemnity: Contractors who do business with the District shall hold the District, its Directors, officers, agents, and employees, harmless from liability of any nature or kind, including cost and expenses, for infringement or use of any patent, copyright, or other proprietary right, secret process, patented or unpatented invention, article, or appliance furnished or used in connection with the contract or purchase order.
8. Insurance certificates are not required at the time of submission. However, by signing Exhibit A – RFQ Response Packet, the bidder agrees to meet the minimum insurance requirements stated in the RFQ. This documentation must be provided to the District prior to execution of an agreement by the District and shall include an insurance certificate which meets the minimum insurance requirements, as stated in the RFQ.
9. The undersigned acknowledges that RFQ responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFQ response or part thereof so marked. RFQ responses submitted in response to this RFQ may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.
10. The undersigned bidder hereby submits this RFQ response and binds itself on award to the District under this RFQ to execute in accordance with such award a contract and to furnish the bond or bonds and insurance required by the RFQ. The RFQ, subsequent Addenda, bidder's Response Packet, and any attachments, shall constitute the Contract, and all provisions thereof are hereby accepted.

11. The undersigned acknowledges **ONE** of the following (please check only one box):

- Bidder is not an SBE and is ineligible for any bid preference; **OR**
- Bidder is an SBE or DVBE as described in the Contract Equity Program (CEP) and Equal Employment Opportunity (EEO) Guidelines, is requesting a 7% bid preference, and has completed the CEP and EEO forms at the hyperlink contained in the CEP and EEO section of this Exhibit A.

For additional information on SBE bid preference, please refer to the Contract Equity Program and Equal Employment Opportunity Guidelines at the above referenced hyperlink.

Official Name of Bidder (exactly as it appears on Bidder's corporate seal and invoice): _____

Street Address Line 1: _____

Street Address Line 2: _____

City: _____ State: _____ Zip Code: _____

Webpage: _____

Type of Entity / Organizational Structure (check one):

- Corporation
- Limited Liability Partnership
- Limited Liability Corporation
- Other: _____
- Joint Venture
- Partnership
- Non-Profit / Church

Jurisdiction of Organization Structure: _____

Date of Organization Structure: _____

Federal Tax Identification Number: _____

Department of Industrial Relations (DIR) Registration Number: _____

Primary Contact Information:

Name / Title: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

Street Address Line 1: _____

City: _____ State: _____ Zip Code: _____

SIGNATURE: _____

Name and Title of Signer (printed): _____

Dated this _____ day of _____ 20 _____



BIDDING SHEET

Cost shall be submitted on this Bid Form as is. The prices quoted shall not include Sales Tax or Use Tax; said tax, wherever applicable, will be paid by the District to the contractor, if licensed to collect, or otherwise directly to the State.

No alterations or changes of any kind to the Bid Form(s) are permitted. RFQ responses that do not comply may be subject to rejection in total. The cost quoted below shall be the cost the District will pay for the term of any contract that is a result of this RFQ process.

Quantities listed herein are annual estimates based on past usage and are not to be construed as a commitment. No minimum or maximum is guaranteed or implied.

Item	Description	Unit of Measure	Estimated Quantity	Unit Cost	Extended Cost
1.	1500-hp medium voltage induction motor, as specified within.	Each	4	\$ _____	\$ _____
2.	Preparation of submittals per Section 26 05 83.1 Paragraph 1.4.	Lump Sum	1		\$ _____
3.	Site visits for initial inspection, start-up of each motor.	Hourly	_____	\$ _____	\$ _____
				TOTAL COST	\$ _____



REQUIRED DOCUMENTATION AND SUBMITTALS

All of the specific documentation listed below is required to be submitted with the Exhibit A – RFQ Response Packet. Bidders shall submit all documentation, in the order listed below, and clearly label each section of the RFQ response with the appropriate title (i.e. Table of Contents, Letter of Transmittal, Key Personnel, etc.).

1. **Description of the Proposed Equipment/System:** RFQ response shall include a description of the proposed equipment/system, as it will be finally configured during the term of the contract. The description shall specify how the proposed equipment/system will meet or exceed the requirements of the District and shall explain any advantages that this proposed equipment/system would have over other possible equipment/systems. The description shall include any disadvantages or limitations that the District should be aware of in evaluating the RFQ response. Finally, the description shall describe all product warranties provided by bidder.
2. **Implementation Plan and Schedule:** The RFQ response shall include an implementation plan and schedule. The plan for implementing the proposed equipment/system and services shall include an Acceptance Test Plan. In addition, the plan shall include a detailed schedule indicating how the bidder will ensure adherence to the timetables for the final equipment/system and/or services.
3. **Evidence of Qualification Testing:** RFQ response provides evidence that the proposed equipment/system has successfully completed the qualification test standard requirements defined in this RFQ.
4. **Sustainability Statement:** Contractors shall submit a statement regarding any sustainable or environmental initiatives or practices that they or their suppliers engage in. This information can be in relation to the specific products procured under this RFQ or in relation to the manufacture, delivery, or office practices of your firm.

If applicable, please also provide any information you have available on the below:

- a. Has your firm taken steps to enhance its ability to assess, track and address issues regarding Greenhouse Gas (GHG) Emissions in answer to recent legislations such as the [Buy Clean California Act](#)? If so, please attach any data you can on the embedded greenhouse gas emissions in the production and transport of the products and/or services which will be provided via this RFQ. If this is not available, please describe the approach you plan to take in order to gather and report this information in the future. For further information in this topic, please see: <http://www.ghgprotocol.org/scope-3-technical-calculation-guidance>

5. **References:**

- (a) Bidders must use the templates in the “References” section of this Exhibit A – RFQ Response Packet to provide references.
- (b) References should have similar scope, volume, and requirements to those outlined in these specifications, terms, and conditions.
 - Bidders must verify the contact information for all references provided is current and valid.
 - Bidders are strongly encouraged to notify all references that the District may be contacting them to obtain a reference.
- (c) The District may contact some or all of the references provided in order to determine Bidder’s performance record on work similar to that described in this RFQ. The District reserves the right to contact references other than those provided in the RFQ response.

6. **Exceptions, Clarifications, Amendments:**

- (a) The RFQ response shall include a separate section calling out all clarifications, exceptions, and amendments, if any, to the RFQ and associated RFQ documents, which shall be submitted with Bidder’s RFQ response using the template in the “Exceptions, Clarifications, Amendments” section of this Exhibit A – RFQ Response Packet.
- (b) **THE DISTRICT IS UNDER NO OBLIGATION TO ACCEPT ANY EXCEPTIONS, AND SUCH EXCEPTIONS MAY BE A BASIS FOR RFQ RESPONSE DISQUALIFICATION.**

7. **Contract Equity Program:**

- (a) Every bidder must fill out, sign, and submit the appropriate sections of the Contract Equity Program and Equal Employment Opportunity documents located at the hyperlink contained in the last page of this Exhibit A. Special attention should be given to completing Form P-25, "Contractor Employment Data and Certification". Any bidder needing assistance in completing these forms should contact the District's Contract Equity Office at (510) 287-0114 prior to submitting an RFQ response.



REFERENCES

RFQ No. 2312 – FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS

Bidder Name: _____

Bidder must provide a minimum of two (2) references, as per SECTION 26 5 83.1, 1.3 QUALITY ASSURANCE, B. Experience, 1.

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	



EXCEPTIONS, CLARIFICATIONS, AMENDMENTS

RFQ No. 2312 – FOUR 1500-HP MAIN AIR COMPRESSOR MOTORS

Bidder Name: _____

List below requests for clarifications, exceptions, and amendments, if any, to the RFQ and associated RFQ Documents, and submit with bidder’s RFQ response. **The District is under no obligation to accept any exceptions and such exceptions may be a basis for RFQ response disqualification.**

Reference to:			Description
Page No.	Section	Item No.	
p. 23	D	1.c.	<i>Bidder takes exception to...</i>

*Print additional pages as necessary



CONTRACT EQUITY PROGRAM & EQUAL EMPLOYMENT OPPORTUNITY

The District's Board of Directors adopted the Contract Equity Program (CEP) to enhance equal opportunities for business owners of all races, ethnicities, and genders who are interested in doing business with the District. The program has contracting objectives, serving as the minimum level of expected contract participation for the three availability groups: white-men owned businesses, white-women owned businesses, and ethnic minority owned businesses. The contracting objectives apply to all contracts that are determined to have subcontracting opportunities, and to all contractors regardless of their race, gender, or ethnicity.

All Contractors and their subcontractors performing work for the District must be Equal Employment Opportunity (EEO) employers and shall be bound by all laws prohibiting discrimination in employment. There shall be no discrimination against any person, or group of persons, on account of race, color, religion, creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), genetic information, or sexual orientation.

Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

All Contractors shall include the nondiscrimination provisions above in all subcontracts.

Please include the required completed forms with your bid.

Non-compliance with the Guidelines may deem a bid non-responsive, and therefore, ineligible for contract award. Your firm is responsible for:

- 1) Reading and understanding the CEP guidelines.
- 2) Filling out and submitting with your bid the appropriate forms.

The CEP guidelines and forms can be found at the following direct link:

[Contract Equity Guidelines and Forms](#)

The CEP guidelines and forms can also be downloaded from the District website at the following link:

<http://ebmud.com/business-center/contract-equity-program/>

If you have questions regarding the Contract Equity Program, please call (510) 287-0114.



EXHIBIT B

INSURANCE REQUIREMENTS

BIDDER shall take out and maintain during the life of the Agreement all insurance required and BIDDER shall not commence work until such insurance has been approved by DISTRICT. The proof of insurance shall be on forms provided by DISTRICT directly following these Insurance Requirements.

BIDDERS are not required to submit completed insurance verification documents with their bid but will be required to submit them upon notification of award. By signing Exhibit A – RFP Response Packet, the BIDDER agrees to meet the minimum insurance requirements stated in the RFP.

The following provisions are applicable to all required insurance:

- A. Prior to the beginning of and throughout the duration of Services, and for any additional period of time as specified below, CONTRACTOR shall, at its sole cost and expense, maintain insurance in conformance with the requirements set forth below.
- B. CONTRACTOR shall provide Verification of Insurance as required by this Agreement by providing the completed Verification of Insurance as requested below signing and submitting this Exhibit B to the DISTRICT. The Exhibit B may be signed by an officer of the CONTRACTOR (Agent) or by the Insurance Broker for the CONTRACTOR. CONTRACTOR shall update Exhibit B throughout the specified term of the insurance required by this Agreement by resubmitting the completed Exhibit B prior to the expiration date of any of the required insurance. The updated Exhibit B shall become a part of the Agreement but shall not require a change order to the Agreement. The Notice to Proceed shall not be issued, and CONTRACTOR shall not commence Services until such insurance has been accepted by the DISTRICT.
- C. CONTRACTOR shall carry and maintain the minimum insurance requirements as defined in this Agreement. CONTRACTOR shall require any subcontractor to carry and maintain the minimum insurance required in this Agreement to the extent they apply to the scope of the services to be performed by subcontractor.
- D. Acceptance of verification of Insurance by the DISTRICT shall not relieve CONTRACTOR of any of the insurance requirements, nor decrease liability of CONTRACTOR.
- E. The insurance required hereunder may be obtained by a combination of primary, excess and/or umbrella insurance, and all coverage shall be at least as broad as the requirements listed in this Agreement.
- F. Any deductibles, self-insurance, or self-insured retentions (SIRs) applicable to the required insurance coverage must be declared to and accepted by the DISTRICT.
- G. At the option and request of the DISTRICT, CONTRACTOR shall provide documentation of its financial ability to pay the deductible, self-insurance, or SIR.
- H. Any policies with a SIR shall provide that any SIR may be satisfied, in whole or in part, by the DISTRICT or the additional insured at its sole and absolute discretion.

- I. Unless otherwise accepted by the DISTRICT, all required insurance must be placed with insurers with a current A.M. Best's rating of no less than A- V.
- J. CONTRACTOR shall defend the DISTRICT and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.
- K. For any coverage that is provided on a claims-made coverage form (which type of form is permitted only where specified) the retroactive date must be shown and must be before the date of this Agreement, and before the beginning of any Services related to this Agreement.
- L. Insurance must be maintained, and updated Verification of Insurance be provided to the DISTRICT before the expiration of insurance by having CONTRACTOR's insurance broker or agent update, sign and return Exhibit B to the DISTRICT's contract manager. For all claims-made policies the updated Verification of Insurance must be provided to the DISTRICT for at least three (3) years after expiration of this Agreement.
- M. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the effective date of this Agreement or the start of any Services related to this Agreement, CONTRACTOR must purchase an extended reporting period for a minimum of three (3) years after expiration of the Agreement.
- N. If requested by the DISTRICT, a copy of the policies' claims reporting requirement must be submitted to the DISTRICT for review.
- O. Where additional insured coverage is required, the additional insured coverage shall be "primary and non-contributory," and will not seek contribution from the DISTRICT's insurance or self-insurance.
- P. CONTRACTOR agrees to provide immediate Notice to the DISTRICT of any loss or claim against CONTRACTOR arising out of, pertaining to, or in any way relating to this Agreement, or Services performed under this Agreement. The DISTRICT assumes no obligation or liability by such Notice but has the right (but not the duty) to monitor the handling of any such claim or claims if they are likely to involve the DISTRICT.
- Q. CONTRACTOR agrees, upon request by the DISTRICT, to provide complete, certified copies of any policies and endorsements within 10 days of such request (copies of policies may be redacted to eliminate premium details.)
- R. It is CONTRACTOR's responsibility to ensure its compliance with the insurance requirements. Any actual or alleged failure on the part of the DISTRICT to obtain proof of insurance required under this Agreement shall not in any way be construed to be a waiver of any right or remedy of the DISTRICT, in this or any regard.
- S. Notice of Cancellation/Non-Renewal/Material Reduction The insurance requirements hereunder are mandatory, and the DISTRICT may, at its sole and absolute discretion, terminate the services provided by CONTRACTOR, should CONTRACTOR breach its obligations to maintain the required coverage and limits set forth in this Agreement. No coverage required hereunder shall be cancelled, non-renewed or materially reduced in coverage or limits without the DISTRICT being provided at least thirty (30) days prior written notice, other than cancellation for the non-payment of premiums, in which event the DISTRICT shall be provided ten (10) days prior written notice. Replacement of coverage with another policy or insurer, without any lapse in coverage or any reduction of the stated requirements does not require notice beyond

submission to the DISTRICT of an updated Verification of Insurance which shall be met by having the CONTRACTOR's insurance broker or agent update, sign and return this EXHIBIT B.

I. Workers' Compensation and Employer's Liability Insurance Coverage

- A. Workers' Compensation insurance including Employer's Liability insurance with minimum limits as follows:
 - Coverage A. Statutory Benefits Limits
 - Coverage B. Employer's Liability of not less than:
 - Bodily Injury by accident: \$1,000,000 each accident
 - Bodily Injury by disease: \$1,000,000 each employee
 - Bodily Injury by disease: \$1,000,000 policy limit
- B. CONTRACTOR's insurance shall be primary, and any insurance or self-insurance procured or maintained by the DISTRICT shall not be required to contribute to it.
- C. If there is an onsite exposure of injury to CONTRACTOR, subcontractor, and/or subcontractor's employees under the U.S. Longshore and Harbor Workers' Compensation Act, the Jones Act, or under laws, regulations or statutes applicable to maritime employees, coverage is required for such injuries or claims.
- D. If CONTRACTOR is self-employed, a sole proprietorship or a partnership, with no employees, and is exempt from carrying Workers' Compensation Insurance, CONTRACTOR must return the completed Verification of Insurance confirming that CONTRACTOR has no employees and is exempt from the State of California Workers' Compensation requirements.
- E. If CONTRACTOR is self-insured with respect to Workers' Compensation coverage, CONTRACTOR shall provide to the DISTRICT a Certificate of Consent to Self-Insure from the California Department of Industrial Relations. Such self-insurance shall meet the minimum limit requirements and shall waive subrogation rights in favor of the DISTRICT as stated below in section "F."
- F. Waiver of Subrogation. Workers' Compensation policies, including any applicable excess and umbrella insurance, must contain a waiver of subrogation endorsement providing that CONTRACTOR and each insurer waive any and all rights of recovery by subrogation, or otherwise, against the DISTRICT, its directors, board, and committee members, officers, officials, employees, agents, and volunteers. CONTRACTOR shall defend and pay any and all damages, fees, and costs, of any kind arising out of, pertaining to, or in any way relating to CONTRACTOR's failure to provide waiver of subrogation from the insurance carrier.

INSURANCE VERIFICATION DOCUMENTS

Verification of Workers' Compensation and Employer's Liability Insurance Coverage

By checking the box and signing below, I hereby verify that the CONTRACTOR is exempt from the State of California's requirement to carry workers' compensation insurance.

As the CONTRACTOR's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the CONTRACTOR carries workers' compensation insurance as required by this Agreement, including the relevant provisions applicable to all required insurance.

Self-Insured Retention Amount: \$ _____

Policy Limit: \$ _____

Policy Number: _____

Policy Period: from: _____ to: _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

II. Commercial General Liability Insurance (“CGL”) Coverage

- A. CONTRACTOR’s insurance shall be primary, and any insurance or self-insurance procured or maintained by the DISTRICT shall not be required to contribute to it.
- B. The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONTRACTOR.
- C. Minimum Requirements. CGL insurance with minimum per occurrence and aggregate limits as follows:
- | | |
|------------------------------------|--|
| Bodily Injury and Property Damage | \$2,000,000 per occurrence & aggregate |
| Personal Injury/Advertising Injury | \$2,000,000 per occurrence & aggregate |
| Products/Completed Operations | \$2,000,000 per occurrence & aggregate |
- D. Coverage must be on an occurrence basis.
- E. Coverage for Products, and Completed Operations, and Ongoing Operations must be included in the insurance policies and shall not contain any “prior work” coverage limitation or exclusion applicable to any Services performed by CONTRACTOR and/or subcontractor under this Agreement.
- F. Insurance policies and Additional Insured Endorsement(s) Coverage shall be included for all premises and operations in any way related to this Agreement.
- G. There will be no exclusion for explosions, collapse, or underground liability (XCU).
- H. Insurance policies and Additional Insured Endorsement(s) shall not exclude liability and damages to work arising out of, pertaining to, or in any way relating to services performed by Subcontractor on CONTRACTOR’s behalf.
- I. Contractual liability coverage shall be included and shall not limit, by any modification or endorsement, coverage for liabilities assumed by CONTRACTOR under this Agreement as an “insured contract.”
- J. Waiver of Subrogation. The policy shall be endorsed to include a Waiver of Subrogation ensuring that the CONTRACTOR and its insurer(s) waive any rights of recovery by subrogation, or otherwise, against the DISTRICT, its directors, board, and committee members, officers, officials, agents, volunteers, and employees. CONTRACTOR shall defend and pay any and all damages, fees, and costs, of any kind, arising out of, pertaining to, or in any way resulting from CONTRACTOR’s failure

to provide the waiver of subrogation from its insurance carrier(s).

- K. "Independent CONTRACTOR's Liability" shall not limit coverage for liability and/or damages arising out of, pertaining to, or in any way resulting from Services provided under this Agreement.

To the fullest extent permitted by law, the DISTRICT, its directors, board, and committee members, officers, officials, employees, agents, and volunteers must be covered as Additional Insureds on a primary and noncontributory basis on all underlying, excess and umbrella policies that shall be evidenced in each case by an endorsement. The Additional Insureds must be covered for liability arising in whole, or in part, from any premises, Products, Ongoing Operations, and Completed Operations by or on behalf of CONTRACTOR, in any way related to Services performed under this Agreement.

- L. A severability of interest provision must apply for all the Additional Insureds, ensuring that CONTRACTOR's insurance shall apply separately to each insured against whom a claim is made, or suit is brought, except with respect to the policies' limit(s).

Verification of Commercial General Liability (CGL) Insurance Coverage

As the CONTRACTOR'S insurance broker/agent, I hereby verify that I have reviewed and confirmed that the CONTRACTOR carries Commercial General Liability insurance, as required by this Agreement, including the relevant provisions applicable to all required insurance:

Self-Insured: Amount: \$ _____

Policy Limit: Per Occurrence: \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

III. Business Auto Liability Insurance Coverage

CONTRACTOR's insurance shall be primary, and any insurance or self-insurance procured or maintained by the DISTRICT shall not be required to contribute to it.

A. The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONTRACTOR.

B. Minimum Requirements. Auto insurance with minimum coverage and limits as follows:
Each Occurrence Limit (per accident) and in the Aggregate: \$2,000,000
Bodily Injury and Property Damage: \$2,000,000

C. Coverage must include either "owned, non-owned, and hired" autos or "any" automobile

This provision ensures the policy covers losses arising out of use of company-owned vehicles ("owned autos"), employee's personal autos ("non-owned autos" meaning not owned by company/insured) or autos that are rented or leased ("hired autos").

D. If CONTRACTOR is transporting hazardous materials or contaminants, evidence of the Motor Carrier Act Endorsement-hazardous materials clean-up (MCS-90, or its equivalent) must be provided.

E. If CONTRACTOR's Scope of Services under this Agreement exposes a potential pollution liability risk related to transport of potential pollutants, seepage, release, escape or discharge of any nature (threatened or actual) of pollutants into the environment arising out of, pertaining to, or in any way related to CONTRACTOR's and/or Subcontractor's performance under this Agreement, then Auto Liability Insurance policies must be endorsed to include Transportation Pollution Liability insurance. Alternatively, coverage may be provided under the CONTRACTOR's Pollution Liability Policies if such policy has no exclusions that would restrict coverage under this Agreement. Coverage shall also include leakage of fuel or other "pollutants" needed for the normal functioning of covered autos.

F. To the fullest extent permitted by law, the DISTRICT, its directors, board, and committee members, officers, officials, employees, agents, and volunteers must be covered as Additional Insureds on a primary and noncontributory basis on all underlying and excess and umbrella policies. The Additional Insureds must be covered for liability arising in whole, or in part, from any premises, Products, Ongoing Operations, and Completed Operations by or on behalf of CONTRACTOR, in any way related to Services performed under this Agreement.

G. A severability of interest provision must apply for all the Additional Insureds, ensuring that CONTRACTOR's insurance shall apply separately to each insured against whom a claim is made, or suit is brought, except with respect to the insurer's limits of liability.

Verification of Business Auto Liability Insurance Coverage

As the CONTRACTOR'S insurance broker/agent, I hereby verify that I have reviewed and confirmed that the CONTRACTOR carries Business Automobile Liability insurance, as required by this Agreement, including the relevant provisions applicable to all required insurance:

Self-Insured: Amount: \$ _____

Policy Limit: Per Accident/Occurrence \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

IV. Excess and/or Umbrella Liability Insurance Coverage

- A. CONTRACTOR's insurance shall be primary, and any insurance or self-insurance procured or maintained by the DISTRICT shall not be required to contribute to it.
- B. The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONTRACTOR.
- C. Minimum Requirements: It is expressly understood by the parties that CONTRACTOR's Excess and/or Umbrella Liability policies shall, at minimum, comply with all insurance requirements set forth within this Agreement.
 - 1. Coverage for Products, Completed Operations, and Ongoing Operations must be included in the insurance policies and shall not contain any "prior work" coverage limitation or exclusion applicable to any Services performed under this Agreement and, if it is a claims-made policy, it must be maintained for a minimum of three (3) years following final completion of the Services.
 - 2. Coverage shall be included for all premises and operations in any way related to this Agreement.
 - 3. There will be no exclusion for explosions, collapse, or underground damage (XCU).
 - 4. Insurance policies and Additional Insured Endorsements shall not exclude coverage for liability and damages from services performed by Subcontractor on CONTRACTOR's behalf.
 - 5. Contractual liability coverage shall be included and shall not limit, by any modification or endorsement, coverage for liabilities assumed by CONTRACTOR under this Agreement as an "insured contract."
 - 6. "Independent CONTRACTOR's Liability" shall not limit coverage for liability and/or damage arising out of, pertaining to, or in any way related to Services provided under this Agreement.
 - 7. To the fullest extent permitted by law, the DISTRICT, its directors, officers, officials, agents, volunteers, and employees must be covered as Additional Insureds on a primary and noncontributory basis on all excess and umbrella policies. The Additional Insureds must be covered for liability arising in whole or in part from any premises, Products, Ongoing

Operations, and Completed Operations by or on behalf of CONTRACTOR, in any way related to Services performed under this Agreement.

8. A severability of interest provision must apply for all the Additional Insureds, ensuring that the CONTRACTOR's insurance shall apply separately to each insured against whom a claim is made, or suit is brought, except with respect to the policy's limits.

9. CONTRACTOR and its excess and/or umbrella Liability insurance coverage must waive any rights of subrogation against the DISTRICT, its directors, officers, officials, employees, agents, and volunteers, and CONTRACTOR shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier(s).

D. CONTRACTOR shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier(s).

Verification of Excess and/or Umbrella Liability Insurance Coverage

As the CONTRACTOR'S insurance broker/agent, I hereby verify that I have reviewed and confirmed that the CONTRACTOR carries Excess and/or Umbrella Liability insurance, as required by this Agreement, including the relevant provisions applicable to all required insurance.

Self-Insured: Amount: \$ _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

EXHIBIT C

GENERAL REQUIREMENTS

Effective: June 9, 2021
Supersedes: September 1, 2021

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1. DEFINITIONS

The following terms shall be given the meaning shown, unless context requires otherwise or a unique meaning is otherwise specified.

- a. **"Change Order"** A Change Order is a written instrument used for modifying the contract with regards to the scope of Work, contract sum, and/or Contract Time. An approved

Change Order is a Change Order signed by the District. An executed Change Order is a Change Order signed by both the District and the Contractor.

- b. **“Contract”** means the agreement between the District and Contractor as memorialized in the Contract Documents.
- c. **“Business Entity”** means any individual, business, partnership, joint venture, corporation, sole proprietorship, or other private legal entity recognized by statute.
- d. **“Buyer”** means the District’s authorized contracting official.
- e. **“Contract Documents”** comprise the entire agreement between the District and the Contractor and can include the District’s contract form if used, any purchase order, RFP, RFQ or Contractor response packet, and any addenda, appendices and District approved changes or amendments. The Contract Documents are intended to be complementary and include all items necessary for the Contractor’s proper execution and completion of the Work. Any part of the Work not shown or mentioned in the Contract Documents that is reasonably implied, or is necessary or usual for proper performance of the Work, shall be provided by the Contractor at its expense.
- f. **“Contractor”** means the Business Entity with whom the District enters into a contractual agreement. Contractor shall be synonymous with “supplier”, “vendor”, “consultant” or other similar term.
- g. **“Day”** unless otherwise specified, days are calendar days, measured from midnight to the next midnight.
- h. **“District”** means the East Bay Municipal Utility District, its employees acting within the scope of their authority, and its authorized representatives.
- i. **“Goods”** means off the shelf software and all types of tangible personal property, including but not limited to materials, supplies, and equipment.
- j. **“Project Manager”** shall be the District designated individual responsible for administering and interpreting the terms and conditions of the Contract Documents, for matters relating to the Contractor’s performance under the Contract with the District, and for liaison and coordination between the District and Contractor.
- k. **“Work”** means all labor, tasks, materials, supplies, and equipment required to properly fulfill the Contractor’s obligations as required in the Contract Documents.
- l. **“Work Day”** Unless otherwise specified, work day includes all days of the year except Saturdays, Sundays and District holidays.

2. BOND

- a. When required in the District's bid or proposal solicitation documents, the Contractor to whom award is made shall furnish a good and approved faithful performance bond and/or payment bond within ten business days after receiving the forms for execution.
- b. The bonds shall be executed by a sufficient, admitted surety insurer (i.e.: as listed on website [http://interactive.web.insurance.ca.gov/webuser/idb_co_list\\$.startup](http://interactive.web.insurance.ca.gov/webuser/idb_co_list$.startup)) admitted to transact such business in California by the California Department of Insurance. After acceptance of the bond(s) by the District, a copy of the bond(s) will be returned to the Contractor.
- c. If, during the continuance of the Contract, any of the sureties, in the opinion of the District, are or become irresponsible, the District may require other or additional sureties, which the Contractor shall furnish to the satisfaction of the District within ten days after notice. If the Contractor fails to provide satisfactory sureties within the ten-day period, the Contract may be terminated for cause under Article 18.

3. CONTRACTOR'S FINANCIAL OBLIGATION

The Contractor shall promptly make payments to all persons supplying labor and materials used in the execution of the contract.

4. SAMPLES OR SPECIMENS

The Contractor shall submit samples or prepare test specimens of such materials to be furnished or used in the work as the Project Manager may require.

5. MATERIAL AND WORKMANSHIP

- a. All goods and materials must be new and of the specified quality and equal to approved sample, if samples have been required. In the event any goods or materials furnished or services provided by the Contractor in the performance of the Contract fail to conform to the requirements, or to the sample submitted by the Contractor, the District may reject the same, and it shall become the duty of the Contractor to reclaim and remove the item promptly or to correct the performance of services, without expense to the District, and immediately replace all such rejected items with others conforming to the Contract. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these specifications or the drawings, and it shall be the duty of the Contractor to call attention to apparent errors or omissions and request instructions before proceeding with the work. The Project Manager may, by appropriate instructions, correct errors and supply omissions, which instructions shall be binding upon the Contractor as though contained in the original Contract Documents.
- b. All materials furnished and all Work must be satisfactory to the Project Manager. Work, material, or machinery not in accordance with the Contract Documents, in the opinion of the Project Manager, shall be made to conform.

6. DEFECTIVE WORK

The Contractor shall replace at its own expense any part of the work that has been improperly executed, as determined by the Project Manager. If Contractor refuses or neglects to replace such defective work, it may be replaced by the District at the expense of the Contractor, and its sureties shall be liable therefor.

7. WARRANTY

Contractor expressly warrants that all goods furnished will conform strictly with the specifications and requirements contained herein and with all approved submittals, samples and/or models and information contained or referenced therein, all affirmations of fact or promises, and will be new, of merchantable quality, free from defects in materials and workmanship, including but not limited to leaks, breaks, penetrations, imperfections, corrosion, deterioration, or other kinds of product deficiencies. Contractor expressly warrants that all goods to be furnished will be fit and sufficient for the purpose(s) intended. Contractor expressly warrants that all goods shall be delivered free from any security interest, lien or encumbrance of any kind, and free from any claim of infringement, copyright or other intellectual property violation, or other violation of laws, statutes, regulations, ordinances, rules, treaties, import restrictions, embargoes or other legal requirements. Contractor guarantees all products and services against faulty or inadequate design, manufacture, negligent or improper transport, handling, assembly, installation or testing, and further guaranties that there shall be strict compliance with all manufacturer guidelines, recommendations, and requirements, and that Contractor guaranties that it will conform to all requirements necessary to keep all manufacturer warranties and guarantees in full force and effect. These warranties and guarantees are inclusive of all parts, labor and equipment necessary to achieve strict conformance, and shall take precedence over any conflicting warranty or guarantee. These warranties and guaranties shall not be affected, limited, discharged or waived by any examination, inspection, delivery, acceptance, payment, course of dealing, course of performance, usage of trade, or termination for any reason and to any extent. In the absence of any conflicting language as to duration, which conflicting language will take precedence as being more specific, Contractor's aforesaid warranties and guarantees shall be in full force and effect for a period of one year from the date of acceptance by the District, but shall continue in full force and effect following notice from District of any warranty or guarantee issue, until such issue has been fully resolved to the satisfaction of District.

8. NOT USED

9. SAFETY AND ACCIDENT PREVENTION

In performing work under the Contract on District premises, Contractor shall conform to any specific safety requirements contained in the Contract or as required by law or regulation. Contractor shall take any additional precautions as the District may reasonably require for safety and accident prevention purposes. Any violation of such rules and requirements, unless promptly corrected, shall be grounds for termination of this Contract or Contractor's right to precede in accordance with the default provisions of the Contract Documents.

10. CHARACTER OF WORKFORCE

The Contractor shall employ none but skilled competent qualified personnel to perform the Work, and shall maintain discipline and order in the conduct of the Work at all times.

11. PREVAILING WAGES & DIR REGISTRATION

- a. Please see www.dir.ca.gov for further information regarding the below.
- b. All Contractors and Subcontractors of any tier bidding on, or offering to perform work on a public works project shall first be registered with the State Department of Industrial Relations (DIR) pursuant to Section 1725.5 of the Labor Code. No bid will be accepted nor any contract entered into without proof of the Contractor and Subcontractors' current registration with the DIR (LC § 1771.1).
- c. All public works projects awarded after January 1, 2015, are subject to compliance monitoring and enforcement by the DIR (LC § 1771.4) and all Contractors are required to post job site notices, "as prescribed by regulation" (LC § 1771.4).
- d. To the extent applicable, pursuant to Section 1773 of the Labor Code, the District has obtained from the Director of Industrial Relations of the State of California, the general prevailing rates of per diem wages and the general prevailing rates for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification, or type of worker needed to execute the contract. Pursuant to Section 1773.2 of the Labor Code, a copy of the prevailing wage rates is on file with the District and available for inspection by any interested party at www.dir.ca.gov.
- e. The holidays upon which such rates shall be paid shall be all holidays recognized in the collective bargaining agreement applicable to the particular craft, classification, or type of worker employed on the Work.
- f. The Contractor shall post a copy of the general prevailing rate of per diem wages at the jobsite pursuant to Section 1773.2 of the Labor Code.
- g. Pursuant to Section 1774 of the Labor Code, the Contractor and any of its Subcontractors shall not pay less than the specified prevailing rate of wages to all workers employed in the execution of the contract.
- h. As set forth with more specificity in Section 1773.1 of the Labor Code, "per diem" wages include employer payments for health and welfare, pension, vacation, travel, subsistence and, in certain instances, apprenticeship or other training programs, and shall be paid at the rate and in the amount spelled out in the pertinent prevailing wage determinations issued by the Director of Industrial Relations.
- i. The Contractor shall, as a penalty to the State or the District, forfeit not more than the maximum set forth in Section 1775 of the Labor Code for each calendar day, or portion thereof, for each worker paid less than the prevailing rates for the work or craft in which the worker is employed under the contract by the Contractor or by any Subcontractor under him. The difference between the prevailing wage rates and the amount paid to

each worker for each calendar day or portion thereof for which such worker was paid less than the stipulated prevailing wage rate shall be paid to such worker by the Contractor.

- j. The specified wage rates are minimum rates only and the District will not consider and shall not be liable for any claims for additional compensation made by the Contractor because of its payment of any wage rate in excess of the general prevailing rates. All disputes in regard to the payment of wages in excess of those specified herein shall be adjusted by the Contractor at its own expense.
- k. General prevailing wage determinations have expiration dates with either a single asterisk or a double asterisk. Pursuant to California Code of Regulations, Title 8, Section 16204, the single asterisk means that the general prevailing wage determination shall be in effect for the specified contract duration. The double asterisk means that the predetermined wage modification shall be paid after the expiration date. No adjustment in the Contract Sum will be made for the Contractor's payment of these predetermined wage modifications.

12. PAYROLL RECORDS & ELECTRONIC SUBMISSION

If prevailing wages apply, Contractor and each Subcontractor, as appropriate, shall comply with the following:

- a. Contractor and each Subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the Work. The payroll records shall be certified and shall be available for inspection in accordance with the provisions of Section 1776 of the Labor Code. Certified payroll records shall be on the forms provided by the DIR or contain the same information required on the Department's form.
- b. The Contractor shall submit for each week in which any contract Work is performed a copy of all payroll records to the Project Manager. The Contractor shall be responsible for submission of copies of payroll records of all Subcontractors.
- c. The Contractor or Subcontractor shall certify the payroll records as shown on the DIR form. In addition, the records shall be accompanied by a statement signed by the Contractor or Subcontractor certifying that the classifications truly reflect the Work performed and that the wage rates are not less than those required to be paid.
- d. For public works projects awarded on or after April 1, 2015, or that are still ongoing after April 1, 2016, no matter when awarded, each Contractor and Subcontractor shall furnish the certified payroll related records as more specifically described above and in Labor Code section 1776 directly to the Labor Commissioner (see LC § 1771.4). These records shall be provided to the Labor Commissioner at least monthly or more frequently if required by the terms of the Contract. For exception on projects covered by collective bargaining agreements like a PLA, please see Labor Code section 1771.4.

- e. In the event of noncompliance with the requirements of Section 1776 of the Labor Code, the Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such Contractor must comply with said Section. Should noncompliance still be evident after such 10-day period, the Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1776 of the Labor Code for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.
- f. The Contractor and every Subcontractor shall post at the workplace and comply with all required wage related workplace postings. Copies of the required postings may be downloaded or ordered electronically from the Department of Industrial Relations website at <http://www.dir.ca.gov/wpnodb.html>.

13. HOURS OF LABOR

Pursuant to the provisions of Sections 1810, et seq. of the Labor Code and any amendments thereof:

- a. Eight hours of labor constitutes a legal day's Work under the contract.
- b. The time of service of any worker employed upon the work shall be limited and restricted to eight hours during any one calendar day, and forty hours during any one calendar week except as provided in Article 13.iv below.
- c. The Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1813 of the Labor Code for each worker employed in the execution of the contract by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any calendar day and forty hours in any one calendar week in violation of this Article and the provisions of Labor Code, Sections 1810, et seq.
- d. Work performed by employees of the Contractor in excess of eight hours per day, and forty hours during any one calendar week, shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay.
- e. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by him in connection with the Work; the record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Standards Enforcement of the State of California.

14. EMPLOYMENT OF APPRENTICES

- a. In the performance of the contract, the Contractor and any Subcontractor shall comply with the provisions concerning the employment of apprentices in Section 1777.5 of the Labor Code and any amendments thereof.
- b. In the event the Contractor or any Subcontractor willfully fails to comply with the aforesaid section, such Contractor or Subcontractor shall be subject to the penalties for noncompliance in Labor Code, Section 1777.7.

15. CHANGES

- a. Changes in the Work can only be made in writing signed by an authorized employee of the District. If the change causes an increase or decrease in the contract sum, or a change in the time for performance under the Contract, an adjustment may be made as determined by the Project Manager.
- b. The District reserves the right to make changes in the design of materials, equipment, or machinery, to make alterations or additions to or deviations or subtractions from the Contract and any specifications and drawings, to increase or decrease the required quantity of any item or portion of the Work or to omit any item or portion of the Work, as may be deemed by the Project Manager to be necessary or advisable and to order such extra work as may be determined by the Project Manager to be required for the proper execution and completion of the whole Work contemplated. Any such changes will be ordered in writing by the Project Manager. The determination of the Project Manager on all questions relating to changes, including extra work, shall be conclusive and binding.
- c. Prior to issuing an amendment or change to the Contract, the Project Manager may request that the Contractor submit a proposal covering the changes. Within 10 business days of receiving the request, the Contractor shall submit its proposal to the Project Manager of all costs associated with the proposed amendment or change and any request for an extension of Contract time. Contractor's proposal shall include detailed estimates with cost breakdowns, including labor, material, equipment, overhead, and profit. Labor shall be broken down into hours and rate per hour. If applicable, the proposal shall include a breakdown for off-site labor (including factory labor, engineering, etc.). The Contractor's proposal shall include an analysis of schedule impact when the Contractor is requesting an adjustment in contract time. The Contractor shall be responsible for any delay associated with its failure to submit its change proposal within the time specified. If the Project Manager decides not to issue an amendment or change after requesting a proposal from the Contractor, the Contractor will be notified in writing. The Contractor is not entitled to reimbursement for Change Order preparation costs if the Contractor's proposal is not accepted by the Project Manager.
- d. If the Contractor agrees with the terms and conditions of the approved Change Order, the Contractor shall indicate its acceptance by signing the original copy and returning it to the Project Manager within 10 Work Days after receipt or with reasonable promptness and in such sequence as to not delay the Work or activities of the District or of separate contractors, whichever is sooner. If notice of any change is required to be given to a surety by the provisions of any bond, the Contractor shall provide notice and the amount of each applicable bond shall be adjusted separately. Payment in

accordance with the terms and conditions set forth in the executed Change Order shall constitute full compensation for all Work included in the Change Order and the District will be released from any and all claims for direct, indirect, and impact expenses and additional time impact resulting from the Work. If the Contractor disagrees with the terms and conditions of the approved Change Order, the Contractor shall indicate specific areas of disagreement and return the approved Change Order to the Project Manager with a detailed written dispute. No payment will be made on the disputed work until the approved Change Order is returned to the Project Manager. However, whether or not the Contractor agrees with the terms and conditions of an approved Change Order, the Contractor shall immediately revise its sequence of operations as required to facilitate timely completion of the changed work and shall proceed with the revised work sequence.

- e. The Project Manager may, after having received a written cost quotation from the Contractor, order the Contractor, in writing, to proceed with the work prior to issuance of an approved Change Order through a change directive. The change directive will authorize the Contractor to proceed with the work subject to the cost quotation submitted by the Contractor. Within five days following receipt of the change directive, the Contractor shall submit a detailed change proposal documenting the amount of compensation. The Project Manager will review the change proposal and, at its option, will either issue an approved Change Order for the work or direct the Contractor to perform the work through Force Account. Until the method of compensation is determined and the approved Change Order is received, the Contractor shall keep full and complete time and material records of the cost of the ordered work and shall permit the Project Manager to have access to such records. An approved Change Order shall supersede any previously issued written change directive covering the same Work.

16. EFFECT OF EXTENSIONS OF TIME

The granting, or acceptance, of extensions of time to complete the Work or furnish the labor, supplies, materials or equipment, or any one of the aforementioned, will not operate as a release of Contractor or the surety on Contractor's faithful performance bond.

17. DELAYS

- a. The Contractor shall take reasonable precautions to foresee and prevent delays to the Work. When the Contractor foresees a delay event, and upon the occurrence of a delay event, the Contractor shall immediately notify the Project Manager of the probability or the actual occurrence of a delay, and its cause. With respect to all delays (compensable, excusable or inexcusable), the Contractor shall reschedule the Work and revise its operations, to the extent possible, to mitigate the effects of the delay. Within 15 days from the beginning of a delay the Contractor shall provide the Project Manager with a detailed written description of the delay, its cause, its impact and the Contractor's mitigation plans. Failure to provide the notification required above waives the Contractor's right to any additional time or compensation resulting from the delay for whatever cause. The Project Manager will investigate the facts and ascertain the extent of the delay, and the Project Manager's findings thereon shall be final and conclusive, except in the case of gross error. An extension of time must be approved by the Project Manager to be effective, but an extension of time, whether with or without consent of

the sureties, shall not release the sureties from their obligations, which shall remain in full force until the discharge of the contract.

- b. For inexcusable delays (delays caused by circumstances within the Contractor's control, the control of its subcontractors or supplies of any tier, or within the scope of the Contractor's contract responsibilities) the Contractor shall not be entitled to an extension of time or additional compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the inexcusable delay.
- c. For excusable delays (delays to completion of the Work within the time limits set forth in the Contract Documents directly caused by events beyond the control of both the Contractor and the District, which delay is not concurrent with an inexcusable delay and which could not have been avoided by the Contractor through reasonable mitigation measures the Project Manager will grant the Contractor an extension of time in an amount equal to the period of Excusable Delay based on the analysis of schedule impact and delay analysis diagram, which shall be the Contractor's sole and exclusive remedy for such delay. Excusable Delays shall include labor strikes, adverse weather as defined in Article 8.5, and Acts of God.
- d. For compensable delays (delays to completion of the Work within the time limits set forth in the Contract Documents that could not be avoided by Contractor mitigation, caused directly and solely by the District or by causes within the exclusive control of the District, and which were not concurrent with any other type of delay) the Project Manager will grant the Contractor an extension of the time to perform under the Contract and compensation in an amount that represents the Contractor's actual direct costs incurred as a direct result of the compensable delay. The Contractor may recover its direct costs only and may not recover (and waives) all other types of indirect, consequential, special and incidental damages.
- e. For concurrent delays (two or more independent causes of delay directly preventing the Contractor from completing the Work within the time limits set forth in the Contract Documents where the delays occur at the same time during all or a portion of the delay period being considered, and where each of the delays would have caused delay to the

Contractor even in the absence of any of the other delays, and none of the delays could have been avoided by Contractor mitigations) the following rules apply:

- i. One or more of the concurrent delays are excusable or compensable, then the period of concurrent delay will be treated as an excusable delay; and
- ii. All of the concurrent delays are inexcusable, then the period of concurrent delay will be inexcusable.

18. TERMINATION

a. Termination by the District for Cause:

- i. District may terminate the Contractor's right to proceed under the Contract, in whole or in part, for cause at any time after the occurrence of any of the following events, each of which constitutes a default:
 1. The Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
 2. The Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
 3. A receiver is appointed to take charge of the Contractor's property.
 4. The Contractor fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
 5. The Contractor fails to make progress so as to endanger performance of the Work within the contractually required time.
 6. The Contractor disregards legal requirements of agencies having jurisdiction over the Work, the Contractor, or the District.
 7. The Contractor fails to provide the District with a written plan to cure a District identified default within five business days after the District's request for a plan to cure; the District does not accept the Contractor's plan for curing its default; or the Contractor does not fully carry out an accepted plan to cure.

8. The Contractor abandons the Work. Abandonment is conclusively presumed when the District requests a written plan to cure a default and the Contractor does not submit the plan within five business days of the District's request.

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9. The Contractor materially fails to meet its obligations in accordance with the Contract Documents.

10. The Contractor is in default of any other material obligation under the Contract Documents.

ii. If any of the above events occur, the District may, in its discretion, require that the Contractor submit a written plan to cure its default, which plan must be provided to the District within 5 business days of the request and must include a realistic, executable plan for curing the noted defaults.

iii. Upon any of the occurrences referred to in Article 18.a.i. above, the District may, at its election and by notice to the Contractor, terminate the Contract in whole or in part; accept the assignment of any or all of the subcontracts; and then complete the Work by any method the District may deem expedient. If requested by the District, the Contractor shall remove any part or all of the Contractor's materials, supplies, equipment, tools, and machinery from the site of the Work within seven days of such request; and, if the Contractor fails to do so, the District may remove or store, and after 90 days sell, any of the same at the Contractor's expense.

iv. No termination or action taken by the District after termination shall prejudice any other rights or remedies of the District provided by law or by the Contract Documents.

v. Conversion: If, after termination for other than convenience, it is determined that the Contractor was not in default or material breach, or that the default or material breach was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for convenience pursuant to Article 18.b. below.

b. Termination by the District for Convenience:

i. The District may, at its option, and for its convenience, terminate the Contract at any time by giving written notice to the Contractor specifying the effective date of termination. Upon such termination, the Contractor agrees to comply with the notice and further agrees to waive any claims

for damages, including loss of anticipated profits, on account of the termination; and, as the sole right and remedy of the Contractor, the District shall pay the Contractor as set forth below.

- ii. Upon receipt of a notice of termination for convenience, the Contractor shall, unless the notice directs otherwise, do the following:
 - 1. Immediately discontinue its performance of the Contract to the extent specified in the notice.
 - 2. Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of a portion of the Work that is not discontinued or that is necessary for an orderly cessation of the Work.
 - 3. Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
 - 4. Thereafter, do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment in transit to or on the site of performance.
- iii. Upon such termination for convenience, the District will pay to the Contractor the sum of the following:
 - 1. The amount of the contract sum allocable to the portion of the Work properly performed by the Contractor as of the effective date of termination, less sums previously paid to the Contractor.
 - 2. Previously unpaid costs of any items delivered to the project site that were already fabricated for subsequent incorporation into the Work.
 - 3. Any proven losses with respect to materials and equipment directly resulting from the termination.
 - 4. Reasonable demobilization costs.
- iv. The above reimbursement is the sole and exclusive remedy to which the Contractor is entitled in the event the contract is terminated for convenience; and the Contractor expressly waives any other claims, damages, demands, compensation or recovery related to this contract or

project. The Contractor agrees to sign a general release incorporating this waiver.

- c. Effect of Termination: Upon termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to the Contractor's obligations under Article 18.b.ii, as to bona fide obligations assumed by the Contractor prior to the date of termination.
- d. Force Majeure: If the contract is suspended or terminated by the District because Contractor's performance is prevented or delayed by an event including an irresistible, superhuman cause, or by the act of public enemies of the State of California or of the United States ("Force Majeure"), the Contractor will be paid for Work performed prior to the Force Majeure event at either (i) the unit prices named in the Contract; or (ii) in the event no unit prices are named, a sum equal to the percentage of the total contract amount that matches the percentage of the total contract Work performed prior to the Force Majeure event.

19. DAMAGES

All losses or damages to material or equipment to be furnished pursuant to the Contract Documents occurring prior to receipt and final acceptance of the Work shall be sustained by the Contractor. The Contractor shall sustain all losses arising from unforeseen obstructions or difficulties, either natural or artificial, encountered in the prosecution of the Work, or from any action of the elements prior to final acceptance of the work, or from an act or omission on the part of the Contractor not authorized by the Contract Documents.

20. ORDER OF PRECEDENCE

- a. In the case of conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence is as follows. Within the same order of precedence, specific requirements shall take precedence over general requirements.
 - i. Approved Change Orders.
 - ii. Addenda.
 - iii. RFQ or RFP.
 - iv. Referenced Standard Specifications and Drawings.
 - v. Contractor's Response Packet.
- b. With reference to drawings:
 - i. Numerical dimensions govern over scaled dimensions.
 - ii. Detailed drawings govern over general drawings.
 - iii. Addenda/Change Order drawings govern over contract drawings.
 - iv. Contract drawings govern over standard drawings.

- v. Notes apply only to the drawing where the notes appear, unless classified as “typical” or intended to apply elsewhere in which case they apply to all drawings where the conditions or circumstance noted occurs.
- vi. Typical details apply to all drawings unless a specific different detail is shown.

21. INDEMNIFICATION

Contractor expressly agrees to defend, indemnify, and hold harmless DISTRICT and its Directors, officers, agents and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys’ fees, arising out of or resulting from Contractor's, its associates’, employees’, subconsultants’, or other agents’ negligent acts, errors or omissions, or willful misconduct, in the operation and/or performance under this Agreement.

22. PROHIBITION OF ASSIGNMENT

The Contractor shall not assign, transfer, or otherwise dispose of any of its rights, duties or obligations under this Contract. This prohibition does not apply to the District. The District retains the right to assign this Contract in whole or in part at any time upon reasonable terms.

23. NEWS RELEASES

The Contractor, its employees, subcontractors, and agents shall not refer to the District, or use any logos, images, or photographs of the District for any commercial purpose, including, but not limited to, advertising, promotion, or public relations, without the District's prior written consent. Such written consent shall not be required for the inclusion of the District's name on a customer list.

24. SEVERABILITY

Should any part of the Contract be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of the Contract, which shall continue in full force and effect, provided that the remainder of the Contract can be interpreted to give effect to the intentions of the parties.

25. COVENANT AGAINST GRATUITIES

The Contractor warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the District with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the District shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the District in procuring on the open market any items which Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in equity.

26. RIGHTS AND REMEDIES OF THE DISTRICT

The rights and remedies of the District provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

27. WAIVER OF RIGHTS

Any action or inaction by the District or the failure of the District on any occasion, to enforce any right or provision of the Contract, shall not be construed to be a waiver by the District of its rights and shall not prevent the District from enforcing such provision or right on any future occasion. Rights and remedies are cumulative and are in addition to any other rights or remedies that the District may have at law or in equity.

28. CONFIDENTIALITY

Contractor agrees to maintain in confidence and not disclose to any person or entity, without the District's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of the District. Contractor further agrees to maintain in confidence and not to disclose to any person or entity, any data, information, technology, or material developed or obtained by Contractor during the term of the Contract. The covenants contained in this paragraph shall survive the termination of this Contract for whatever cause.



EXHIBIT D IRAN CONTRACTING ACT CERTIFICATION

Pursuant to Public Contract Code (PCC) § 2204, an Iran Contracting Act Certification is required for solicitations of goods or services of \$1,000,000 or more.

To submit a bid or proposal to East Bay Municipal Utility District (District), you must complete **ONLY ONE** of the following two paragraphs. To complete paragraph 1, check the corresponding box **and** complete the certification for paragraph 1. To complete paragraph 2, check the corresponding box and attach a copy of the written permission from the District.

- 1. We are not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services (“DGS”) pursuant to PCC § 2203(b), and we are not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

CERTIFICATION FOR PARAGRAPH 1:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the BIDDER/bidder to the clause in paragraph 1. This certification is made under the laws of the State of California.

Firm: _____

By: _____ Date: _____
(Signature of Bidder)

Title: _____

Signed at: _____ County, State of: _____

OR

- 2. We have received written permission from the District to submit a bid or proposal pursuant to PCC § 2203(c) or (d). *A copy of the written permission from the District is included with our bid or proposal.*

EXHIBIT E

APPENDIX A AND APPENDIX B

APPENDIX A



FIGURE 1 MAC 1-2 MOTOR POWER LEADS



FIGURE 2 MAC 1-2 MAIN OIL PUMP



FIGURE 3 MAC 2-1 MAIN OIL PUMP

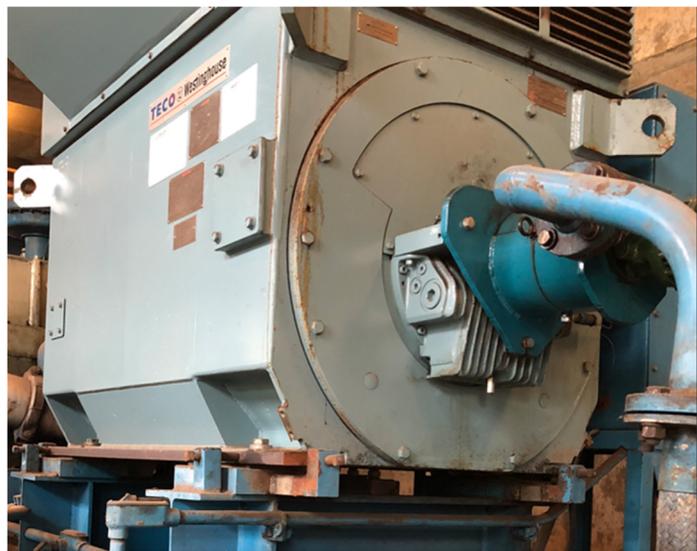


FIGURE 4 MAC 2-1 MAIN OIL PUMP

Appendix B - API 541 Datasheets

<p>INDUCTION MOTOR API 541 5th Edition -- DATASHEETS U.S. CUSTOMARY UNITS</p> <p>PURCHASER'S SELECTIONS</p> <p><i>Bold Italics = Indicate Default Selection</i></p>	<p>JOB NO. _____ ITEM / TAG NO. _____ PURCHASE ORDER NO. _____ REQ. / SPEC. NO. _____ REVISION NO. _____ DATE _____ BY _____ REV. DATE _____ PAGE <u>1</u> OF <u>6</u> Rev _____</p>
<p>1 USER <u>East Bay Municipal Utility District</u></p> <p>2 LOCATION <u>2020 Wake Ave, Oakland, CA 94607</u></p> <p>3 PROJECT NAME <u>MWWTP Oxygen Plant Rehabilitation</u></p> <p>4 SITE / PLANT <u>Main Wastewater Treatment Plant (MWWTP)</u></p> <p>5 Applicable To: <input type="radio"/> Proposal <input type="radio"/> Purchase <input type="radio"/> As Designed <input type="radio"/> As Built</p>	<p>APPLICATION <u>Main Air Compressor Motor</u></p> <p>SUPPLIER _____</p> <p>SUPPLIER REF. No. _____</p> <p>NUMBER of UNITS REQUIRED _____</p> <p>MOTOR TAG No.(s) <u>W44-ACP-1-1, W44-ACP-1-2, W44-ACP-2-1, W44-ACP-2-2</u></p>
<p>Bold Italics = Indicate the Standard's default selections - refer to Annex C for Datasheet Guide</p>	
<p>BASIC DESIGN - General</p>	
<p>6 Applicable Standards (1.3.2; 2.0): North American (i.e., ANSI, NEMA) Use SI (metric) datasheets for International Standards (IEC, etc.)</p>	
<p>7 Power / RPM ratings are specified by: <input type="radio"/> User/Project <input type="radio"/> OEM <input type="radio"/> Other _____</p>	
<p>8 Nameplate power rating (4.2.1.1): <u>1500</u> <input checked="" type="radio"/> HP <input type="radio"/> kW Motor speed: <u>3600, 2 Pole</u> RPM (Synchronous)</p>	
<p>9 Nameplate Voltage/Ph/Hz rating (4.2.1.2): <u>4160</u> Volts <u>3</u> Phase <u>60</u> Hertz</p>	
<p>10 Nameplate ambient temp. rating [4.3.1.1 b)]: <u>40° C</u> <input type="radio"/> Other: _____ °C <input type="radio"/> Minimum rated operating ambient temp.(4.1.2): _____ °C</p>	
<p>11 Stator insulation class [4.3.1.1 a)]: Class F <input type="radio"/> Other Class: _____</p>	
<p>12 Stator temperature rise [4.3.1.1 b)*]: Class B <input type="radio"/> Other: _____ * (See <u>underlined sentences</u> in Datasheet Guide for this item)</p>	
<p>13 Duty (4.1.2): Continuous <input type="radio"/> Other: _____</p>	
<p>14 Max. sound pressure level @ 1 m. @ no load, full voltage/frequency on sine wave power (4.1.3; 4.1.4): <u>85 dBA</u> <input type="radio"/> Other: _____ dBA</p>	
<p>15 Voltage and frequency variations (4.2.1.3): Per NEMA <input type="radio"/> Other: _____</p>	
<p>16 Motor power source: Sine Wave Power <input type="radio"/> ASD power (complete below section) <input checked="" type="radio"/> Solid state soft starter - complete data on page 6, line 8</p>	
<p>17 Adjustable Speed Drive (ASD) conditions, if applicable (4.1.4; 4.1.5; 4.2.1.2.3, 4.3.1.2):</p>	
<p>18 <input type="radio"/> ASD only operation (4.2.4.5) <input type="radio"/> ASD+DOL start capability <input type="radio"/> ASD only w-bypass to utility power <input type="radio"/> ASD w-DOL start & bypass to utility</p>	
<p>19 <input type="radio"/> Variable Torque speed range: Min speed _____ RPM _____ ft-lb Max. speed _____ RPM _____ ft-lb</p>	
<p>20 <input type="radio"/> Constant Torque speed range: Min speed _____ RPM _____ ft-lb Max. speed _____ RPM _____ ft-lb</p>	
<p>21 <input type="radio"/> Constant Power speed range: Max speed _____ RPM _____ ft-lb</p>	
<p>22 ASD description and information affecting motor design (obtain from ASD Supplier; refer to Datasheet Guide)</p>	
<p>23 ASD type / topology: _____</p>	
<p>24 ASD output harmonics, describe and/or attach data (4.3.1.2): _____</p>	
<p>25 ASD maximum voltage spike amplitude and rise-time at drive output (4.3.1.2.1): _____ Volts @ _____ microseconds</p>	
<p>26 ASD Maximum common mode voltage (CMV) at drive output (4.3.1.2.2): _____ Volts</p>	
<p>27 Other ASD information / motor requirements: _____</p>	
<p>28 _____</p>	
<p>29 Area Classification (4.1.8): <input checked="" type="radio"/> Nonclassified <input type="radio"/> Classified as: Class _____ Group _____ Division _____ or Zone _____</p>	
<p>30 Temperature code (T-code): _____ Autoignition temperature (AIT): _____ °C</p>	
<p>31 <input type="radio"/> Other: _____</p>	
<p>32 Site Data (4.1.2; 4.4.8.3; 4.4.10.4): Site ambient temperature: _____ Max <u>40</u> Min <input checked="" type="radio"/> °F <input type="radio"/> °C</p>	
<p>33 Minimum rated storage ambient temp.(4.1.2): _____ °F <input type="radio"/> °C Site elevation: <u>200</u> ft.</p>	
<p>34 Relative humidity: <u>90</u> % Max <u>20</u> % Min <input type="radio"/> Use this higher elevation for motor rating: _____ ft.</p>	
<p>35 Motor location: <input checked="" type="radio"/> Indoor Building temperature controlled: <input type="radio"/> No <input type="radio"/> Yes Controlled temp.: _____ °F <input type="radio"/> °C <input type="radio"/> Use for motor rating</p>	
<p>36 <input type="radio"/> Outdoor Roof over motor: <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Offshore platform / similar marine environment [4.4.1.1 c)]</p>	
<p>37 <input type="radio"/> Seismic loading (4.4.2.2), IBC Zone: _____ Importance Factor: _____ <input type="radio"/> Other seismic requirements: _____</p>	
<p>38 Unusual Site Conditions, Define: _____</p>	
<p>39 <input type="radio"/> Additional environment considerations, chemicals, etc. (4.1.2): _____</p>	
<p>40 <input type="radio"/> Abrasive dust protection for open enclosures [4.4.1.2.2 c)]: _____</p>	
<p>41 <input type="radio"/> Corrosive agents in environment, re: stress corrosion cracking (4.4.10.1.2): _____</p>	
<p>42 Other: _____</p>	
<p>43 _____</p>	

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BASIC DESIGN - Enclosure, Mounting, Electrical system

1 **Enclosure (4.4.1.2)** Degree of Protection (4.4.1.2.1) IP _____ Method of Cooling (4.4.1.2.1) IC _____
2 WP-II (Weather Protected Type II) (4.4.1.2.2) WP-I (Weather Protected Type I) (4.4.1.2.2) DPG (Dripproof Guarded) (4.4.1.2.2)
3 Air filters: **Required for WP-II (5.5.3)** Provisions only for WP-I or DPG (5.5.2) Provide filters for WP-I or DPG (5.5.4)
4 Air filter capability (5.5.4): **90% of particles \geq 10 micron** Other: _____
5 Purchaser specified filters: Manufacturer: _____ Type: _____ Model: _____
6 Differential pressure device (5.5.5): **Provisions required for WP-II** Differential pressure switch (5.5.5) Combination
7 Provisions only for WP-I or DPG (5.5.5) Differential pressure gauge (5.5.5) switch / gauge
8 Purchaser specified device: Manufacturer: _____ Type: _____ Model: _____
9 Enclosure for motors rated 6kV and above: [4.4.1.1 f): **TEFC, TEAAC, or TEAAC (IP44 or higher)** or Use enclosure selected in line 2
10 TEFC (4.4.1.2.3) TEPV (4.4.1.2.3) Other enclosure: _____
11 TEAAC (4.4.1.2.3) Heat exchanger tube materials [4.4.10.8 a): Aluminum Alum. Alloy Copper Copper Alloy Other _____
12 Stainless Steel 300 Series Stainless Steel 316 Series (req'd for offshore) [4.4.10.8 a)]
13 TEWAC (4.4.1.2.4) Heat exchanger tube materials [4.4.10.8 b): **90-10 Cu-Ni** Other _____
14 Cooling water conditions **per 4.4.1.2.4 a):** Water & glycol solution Other cooling water conditions or chemistry (attach documentation)
15 Cooler location-orientation [4.4.1.2.4 c): Supplier decision Above stator Other _____
16 Cooler inlet-outlet location (facing NDE): Supplier decision Right side Left side Other _____
17 Tube construction [4.4.1.2.4 d); 4.4.10.8 c): **Single tube** Double tube Redundant coolers [4.4.1.2.4 b)]
18 Leak detection [4.4.1.2.4 c): **Required** For double tube coolers: **inner tube leak detection required** Outer tube detection also
19 Flow sensor with local indicator [4.4.1.2.4 g): **Required** Not required Relay contacts: Norm.Open (NO) Norm.closed (NC)
20 Purchaser specified device: Manufacturer: _____ Type: _____ Model: _____
21 Cooler air inlet & outlet temperature sensor [4.4.1.2.4 h): **Required** Not required Same as winding Other _____
22 Purchaser specified device: Manufacturer: _____ Type: _____ Model: _____
23 System of units for hardware (1.3.1): U.S. / North American Customary SI (Metric)
24 Hardware-fasteners material [4.4.1.1 c): **Stainless Steel 300 series through M12 (1/2 in.)** SS 316 series through 1/2 in. for offshore
25 Provision for pre-start purging [4.4.1.1 e): Purchaser specified purge details: _____
26 Field piping connection sizes (4.4.3.1): **Supplier std.** Other: _____
27 Duct gaskets/bolts provided by (4.4.3.8): **Supplier std.** Other: _____
28 Auxiliary motor driven fans (4.4.10.6.3): Yes No Ph / Volts.: _____ Phase _____ Volts
29 Paint system: **Supplier's paint system** Purchaser specified paint system Paint system spec. no.: _____
30 Paint color: **Supplier's paint color** Purchaser specified paint color Define paint color and code: _____
31 **Mounting:** Horizontal foot mounted Horizontal flange mounted with feet Vertical foot mounted
32 Vertical flange mounted Shaft down Shaft up Solid shaft Hollow shaft Non-reverse ratchet (NRR)
33 Vertical Motor to carry thrust (if selected, complete applicable area of Bearing &/or Driven Equipment / OEM section, pg. 6, lines 39 and 40)
34 Flange type / bolt circle: Supplier decision Other: _____
35 Other mounting requirements: _____
36 Baseplate: furnished by (4.4.2.6): _____ Soleplate: furnished by (4.4.2.6): _____
37 Non-massive Foundation applies (4.4.6.1.3, 4.4.6.2.1.2), Description: _____
38 Data for non-massive system dynamic analysis required from machine vendor per 4.4.6.1.3 a), b), c), d)
39 **Electrical System:** Primary power source **4160** Volts **3** Phase **60** Hertz Maximum ground fault _____ Amps
40 Method of system grounding (5.6.2.3) Resistance Reactance Ungrounded Solid
41 3-Phase fault Current at machine terminals (5.1.2) _____ MVA Let-through energy (5.1.2.1): _____ I²t (Ampere-squared seconds)
42 Min S.C. at motor bus [4.2.3.2 c)] _____ MVA at _____ V_{base} X/R ratio: _____ Min.motor term. start voltage _____ % rated
43 Other information: _____

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BASIC DESIGN - Bearings, Seals

1 **Bearings:** Horizontal machines

2 Bearing type: **Hydrodynamic (4.4.7.1.1)** Sleeve (4.4.7.1.1) Tilting pad (4.4.7.1.1)

3 Bearing constant-level oilers required (4.4.7.2.2) Type: _____

4 Antifriction (4.4.7.1.3)

5 Other: _____

6 **Bearings:** Vertical machines

7 Thrust bearing load Downthrust Momentary _____ lbs Upthrust Momentary _____ lbs
[4.4.7.1.11 a] Continuous _____ lbs Continuous _____ lbs

8 Other: _____

9

10 **Seals:** Special seals for gas purge [4.4.7.3 a)] Non-conducting seals [4.4.7.3 b)]

11 **Other:** _____

12

BASIC DESIGN - Bearing Lubrication

13 **Hydrodynamic Bearings: Ring type self lubrication (4.4.8.1)**

14 Type/viscosity of oil (4.4.8.5; 4.4.8.8; 5.1.4.2) Supplier decision Other, define: _____

15 Pressurized lube required (4.4.8.4) Common with driven equipment (4.4.8.5)

16 System supplied by (4.4.8.4): Driven equipment supplier End user Motor supplier Other _____

17 Lube System to comply with API 614 (4.4.8.6): Part 3 General Purpose Part 2: Special Purpose ISO 10438-1

18 Main oil pump driven by: Supplier decision Separate, independent motor Main motor shaft

19 Other lube system information: _____

20 Meet cleanliness requirements of API 614 for 5 GPM & above capacity (6.2.3.2)

21 Purge oil mist (4.4.7.4.1) (describe or attach requirements): _____

22 **Antifriction Bearings:** Grease type: Supplier decision Other _____

23 Pure oil mist (4.4.7.4.1; 4.4.7.4.5) Oil mist ready or Oil mist provisions only (bearing grease removal may be required - see guide)

24 **Vertical Motor Bearings:** Thrust bearing: Supplier decision Grease lubrication Oil Sump lubrication

25 Guide bearing: Supplier decision Other: _____

26 **Other:** _____

SPECIAL CONDITIONS

27 Shaft and spider one piece forging for 4 or more poles [4.4.5.1.4; 4.4.5.1.2 b)]

28 Special lower vibration limits, define (6.3.3.12): _____

29 Efficiency evaluation factor (8.1.2), EF = _____ cost / kW C = _____ cost / KWH applied at _____ % of full load

30 Test method for expected and guaranteed efficiency data (8.1.3.f): _____

31 Local codes, define (4.1.8): _____

32 External loads imposed on motor enclosure when connected at installation site, define (4.4.4): _____

33 _____

34 Special overspeed requirement (4.1.5, 4.4.5.2.7): _____

35 **Other:** _____

36 **Notes / Other Requirements:** _____

37 _____

38 _____

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ACCESSORIES

1 **Heaters:** Frame space heaters (5.4.1; 5.4.2; 5.4.3): Sheath material: Supplier decision Other: _____
2 Single voltage design Operating voltage _____ Phase _____
3 or Dual voltage design Operating voltages _____ / _____ Phase _____
4 Bearing heaters (4.4.8.3): Operating voltage _____ Phase _____
5 Main terminal box space heaters required: also see main terminal box section, page 5
6 For classified areas provide Temp. code (from pg.1): **T3** used for labeled heaters if not specified
7 max. surface temp. (5.4.2): _____ Max. surface temp.: _____ °C (less than or equal to 80% of AIT on pg.1 for unlabeled heaters, **160° C** if AIT not specified)

8 **Winding Temperature Detectors (5.2):** **RTD - Platinum, 3 Wire, 100 Ohms at 0°C (5.2.1.1)** Other RTD Material: _____
9 Required number per phase (5.2.1.2): **Four (4)** Other _____ Wires: _____ Resistance: _____
10 Ground one (1) common lead each element in terminal box (5.2.1.2)
11 Thermocouples: Type: _____ No. per phase: **Three (3)** Other _____

12 **Bearing Temperature Detectors (5.3):** **RTD - Platinum, 3 Wire, 100 Ohms at 0°C; Two (2) Per Bearing for Hydrodynamic & Thrust Bearings (5.3.1)**
13 Other qty. per bearing **2** Dual element OK Install per API 670 (5.3.1) Ground one (1) common lead Provisions only
14 Other RTD material: _____ Wires: _____ Resistance: _____ Other info: _____
15 Thermocouples: Type: _____
16 Oil temp. indicators (dial thermometers) (4.4.7.1.16) Type: _____ Alarm contacts Number of contacts: _____ NO NC
17 Location of terminations for bearing temp. det. (5.1.14): Supplier decision Terminal head T-box T-box with winding temp. det.
18 Antifriction bearings: Use selections above when antifriction bearings are specified

19 **Vibration Detectors (5.8)**

20	Non-contact Shaft Probes (5.8.1):	Motors operating at 1200 rpm and higher	Motors operating at less than 1200 rpm
21	Shaft probes (X-Y) (5.8.1):	Provisions required <input type="radio"/> Installed	<input type="radio"/> Provisions <input type="radio"/> Installed
22	Phase reference probe (5.8.1):	Provisions required <input type="radio"/> Installed	<input type="radio"/> Provisions <input type="radio"/> Installed
23	Number per bearing (X-Y) (5.8.2):	Two (2) <input type="radio"/> Four (4)	Two (2) <input type="radio"/> Four (4)
24	Provide two (2) axial-position probes for hydrodynamic thrust bearings at the thrust end (5.8.2):	Provisions Required <input type="radio"/> Installed	
25	Probe lead protection (5.8.1.1):	Conduit <input type="radio"/> Other: _____	
26	Manufacturer of probes, oscillator-demodulator:	<input type="radio"/> Supplier decision <input type="radio"/> Purchaser defined, type: _____	
27	Probes provided by:	<input type="radio"/> Supplier <input type="radio"/> Other: _____	Installed By: <input type="radio"/> Supplier <input type="radio"/> Other: _____
28	Oscillator-Demodulator By:	<input type="radio"/> Supplier <input type="radio"/> Other: _____	Installed By: <input type="radio"/> Supplier <input type="radio"/> Other: _____
29	Location of terminations (5.1.14):	<input type="radio"/> Supplier decision <input type="radio"/> In osc.-demodulators box <input type="radio"/> In sensor housing <input type="radio"/> Other: _____	

30 **Bearing Housing Seismic Sensors:** Manufacturer: _____
31 Sensor: Installed Provisions only Per API 670 (5.8.3) Supplier decision Purchaser defined: _____
32 Vibration switch: Installed Provisions only Per API 670 (5.8.3) Supplier decision Purchaser defined: _____
33 Device provided by: Supplier Other: _____ Installed by: Supplier Other: _____
34 Define mounting / hole size if purchaser defines device: _____ If switch, type: Manual reset Electric reset
35 D.E. bearing Qty.: _____ Position(s): Horizontal Vertical Axial Other: _____
36 N.D.E. bearing Qty.: _____ Position(s): Horizontal Vertical Axial Other: _____
37 Location of terminations (5.1.14): Supplier decision Terminal box Terminal head In sensor housing

38 **Other Monitors and Devices**
39 Monitor to alarm for shaft grounding brush replacement (4.4.7.1.9) Describe: _____
40 Other monitors or devices: _____

41 **Alarm and Control Switches (5.6.1):** **SPDT 10 Amp 120VAC & 125VDC** Other: _____
42 **Auxiliary Equipment T-Boxes (5.1.4.1):** Location of aux. boxes (facing non-drive end): Left side Right side Other: _____
43 Stainless Steel aux. boxes/encl. (5.1.4.1) Cond./cable entry (5.1.4.1, 5.1.13): Bottom Left or Right side facing non-drive end
44 **Accessory Equipment Wiring Outside Enclosure (5.1.11):** **Rigid Conduit** Other: _____

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ACCESSORIES - Main Terminal Box

- 1 **Main Terminal Box (5.1.1):** Box size: **Minimum size is Type II per NEMA MG 1 Part 20 with Copper Bus Bar & Standoff Insulators Required**
- 2 Other Size: Supplier decision for required accessories For shielded cable term. [5.1.6 e)] Other: _____
- 3 Box location facing non-drive end: Left side Right side Other: _____ Thermal insulation [5.1.6 a)]
- 4 Cable enter from (5.1.4.1): Bottom Top Drive end side Non drive end side Quick disconnect studs or receptacles [5.1.6 f)]
- 5 Incoming conductor size: _____ Type _____ Insulation _____ Qty. per phase _____ Provision for purging [5.1.6 c)]
- 6 All phase leads in terminal box (4.3.6): **Required 750kW (1000HP) and larger** Provide in < 750kW (1000HP) Removable links [5.1.6 d)]
- 7 Copper bus joint plating [5.1.6 i)]: Supplier decision Silver Tin None Copper ground bus [5.1.6 k)]
- 8 Insulated terminations and interior jumpers [5.1.6 m)] 6kV & up use insulated bus bar between stator windings and main terminals (4.3.9)
- 9 Main t/box space heaters [5.1.6 b)]: Single voltage design Operating voltage _____ Phase _____
or Dual voltage design Operating voltages _____ / _____ Phase _____
- 10 Refer to page 4 for heater T-code, etc.
- 11 For the devices following below, the purchaser may make a Provide-Install selection; the default is **Provide and Install by Supplier**:
- 12 Differential protection current transformers [5.1.6 h); 5.1.8; 5.6.3] Provided By _____ and Installed By _____
- 13 Type: Self-balancing Full differential _____
- 14 Accuracy class _____ Ratio _____ Quantity: _____
- 15 Surge capacitors [5.1.6 g); 5.6.2.1, 5.6.2.3]: Microfarads _____
- 16 Surge arresters [5.1.6 g); 5.6.2.2, 5.6.2.3]: kV Rated _____
- 17 Current transformers [5.1.6 h)] for phase current meter _____
- 18 Accuracy class _____ Ratio _____ Quantity: _____
- 19 Voltage transformers [5.1.6 j)] for voltage meter Fuses required _____
- 20 Accuracy class _____ Ratio _____ Quantity: _____
- 21 Partial discharge (PD) detectors [5.1.6 l), 5.6.4.1] _____
- 22 Describe required system: _____
- 23 PD t-box location (5.6.4.3): **vertical outside surface of main t-box** Other: _____

MISCELLANEOUS, SUPPLIER'S DATA

- 24 Qty. special tools and lifting devices (4.1.11, 4.1.12, 4.4.2.14): _____ Proof of non-sparking, corrosion resistant fan (4.4.10.6.1)
- 25 Separate nameplate with purchaser's information - list below (4.4.11.4) Electronic vibration test data - define digital format below (6.3.3.17)
- 26 _____
- 27 **Shipment (6.4.1)** Domestic Export boxing Special shipping bearings [6.4.1 k)] Outdoor storage more than six (6) months (6.4.2)
- 28 **Proposals (8.1)** Typical drawings & literature with proposal (8.1.8) Purchaser defined efficiency method [8.1.3 f)]: _____
- 29 Separate price for each test on datasheet page 7 (8.1.14) Packaged price for all tests on datasheet page 7 (8.1.14)
- 30 Provide requirements for special weather & winterizing protection (8.1.15) Provide safe stall time calculation method and limits (4.2.4.3)
- 31 Provide quote for supervision of installation and erection (8.1.17) Provide quote for start-up commissioning service (8.1.17)
- 32 Materials to be identified with ANSI, ASTM, or ASME numbers (8.1.18): _____
- 33 **Contract Data (8.3)** Special identification for transmittals (8.3.2) Define below or specify where this information is to be found
- 34 _____
- 35 **Drawings (8.5)** System of units for drawings / data (1.3.1): U.S. / N.Am. customary only SI (Metric) only U.S. (SI) SI (U.S.)
- 36 Supplier to provide curve data in tabular format (8.5.1) Define preferred digital format: _____
- 37 Quantities of documents & drawings, and documentation schedule (or define source for this information) (8.5.1): 8
- 38 After purchaser review of drawings, quantity of certified drawings to be provided (8.5.2): _____
- 39 **Instruction Manuals (8.7)** Quantity of instruction manuals to provide (8.7.1) (typically supplied in digital format): _____
- 40 Detailed instructions and photo's, etc. for disassembly and inspection of bearings and seals [8.7.4 c)]
- 41 Photos showing machine assembly steps required; including each step of bearing assembly (8.7.5)
- 42 Copies of applicable certifications, including NRTL, material certifications (including PMI), and other certifications for the machine(s) (8.7.6)
- 43 Define any/all certifications required, including materials: _____
- 44 _____

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LOAD REQUIREMENTS AND STARTING CONDITIONS

- 1 **Load torque and inertia requirements (4.2.2):** **Per NEMA MG 1 Part 20** or Per specified load curve & data (lines 25 and 26 below) [4.2.2.1 a)]
- 2 Design load curve condition: Unloaded (e.g. closed valve or damper) Loaded (e.g. open valve or damper) Partially loaded (e.g. min.flow)
- 3 Load re-acceleration required [4.2.2.1 b)]: **NO** Yes Re-acceleration load data or curve no.: _____
- 4 If yes above, complete the following (4.2.3.5): Max time of voltage interruption _____ Seconds
- 5 Voltage at motor terminals during re-acceleration _____ Volts
- 6 **Motor Starting (4.2.3):** **Starting with 80% of rated voltage at motor terminals (4.2.3.1)** or Other percent of rated voltage _____ %
- 7 Other starting method [4.2.3.2 a)]: Autotransformer Captive transformer Reactor Solid state soft starter ASD
- 8 Other method % volts: _____ % If Soft Starter, define percent Locked Rotor current limit during acceleration: _____ %
- 9 Maximum Locked Rotor current other than in 4.2.4.4 a) (450 to 650%): _____ % of Full Load amps or Maximum amps
- 10 Determine starting capability per [4.2.3.2 b)]: Min. _____ Volts at motor terminals under _____ Amps Locked Rotor current
- 11 or [4.2.3.2 c)]: Min. _____ S.C. MVA and _____ X/R ratio with _____ base voltage and _____ % Rated volts at motor terminals
- 12 Provide curves & data [8.1.3 a), b)]: **at rated voltage & min.start conditions** Other: _____ % Volts Other: _____
- 13 No. of consecutive starts other than Table 4 (4.2.4.1): With motor temperature at ambient: **3** Other: _____
- 14 With motor temperature greater than ambient but less than rated operating temp.: **2** Other: _____
- 15 No. of full voltage starts if more than 5000 required (4.2.4.1; 4.4.5.1.1): _____
- 16 Other: _____

DRIVEN EQUIPMENT INFORMATION - OEM DATA

- 17 Driven equipment: Tag no.(s): _____ Description _____ Location _____
- 18 Driven equipment mfr.: _____ Type / Model no. _____ RPM _____
- 19 Driven equip. rotation **viewed from non drive end of motor**: Clockwise Counterclockwise Bi-directional
- 20 Required motor rotation **viewed from non drive end of motor**: Clockwise Counterclockwise Bi-directional Overspeed trip point (if applicable) (4.1.5) _____
- 21 Type of load: Centrifugal: Pump Compressor Fan Other _____ RPM
- 22 Positive displacement: Pump Reciprocating compressor Compressor factor "C": _____
- 23 Maximum current pulsation per API 618 (4.2.3.6): **40%** Other: _____ %
- 24 Provide crank-effort chart or torque-effort curve no. [8.1.3 g)]: _____
- 25 Load characteristics per (4.2.2.1): **NEMA MG 1 Part 20** Other - provide load speed-torque curve no. [4.2.2.1 a)]: _____
- 26 Total driven equipment load inertia reflected to motor [4.2.2.1 c)]: Wk^2 : _____ lb-ft² or GD^2 : _____ kg-m² at: _____ RPM
- 27 Speed increasing or reducing gearbox [4.2.2.1 c)]: Ratio: _____ Note: affect on inertia to be included in total inertia above
- 28 Driver connection to load: Direct Coupled Gearbox V or cog belt Belt Ratio: _____
- 29 Motor shaft extension (4.4.5.1.9): Cylindrical fit Taper fit Integral flange
- 30 Coupling: Specified by: Purchaser Driven equipment supplier Motor supplier Per API 671
- 31 Coupling manufacturer: _____ Type: _____ Model: _____
- 32 Supplied by: Purchaser Driven equipment supplier Motor supplier Other: _____
- 33 Motor half coupling mounted by (4.4.9.4): (requires vibration test in 6.3.1.5)
- 34 Purchaser Driven equipment supplier Motor supplier Other: _____
- 35 Coupling inertia [4.2.2.1 c)]: Wk^2 : _____ lb-ft² or GD^2 : _____ kg-m² (To be included in total inertia above)
- 36 Mass moment of half coupling assy. [4.4.6.2.1.1 f)]: _____ lb-ft² or _____ kg-m² (For damped unbal. response analysis)
- 37 Center of gravity of half coupling assy., drawing reference or dimensions (6.3.5.3): _____
- 38 Other information: _____
- 39 Vertical pumps: Thrust bearing load _____ lbs Momentary _____ lbs
- 40 [4.4.7.1.11 a)] Downthrust Continuous _____ lbs Upthrust Momentary _____ lbs
- 41 Other information: _____
- 42 _____

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ANALYSIS, SHOP INSPECTION, AND TESTS

- 1 (m) Indicates line item is not required ◁ (v) Indicates line item applies to only one machine in a multiple machine application/order
2 (I) Indicates Purchaser required line item ◁ (t) Indicates line item applies to all machines in a multiple machine application/order

3 Make selections in only one column for each item

	<u>Required</u>		<u>Witnessed</u>		<u>Observed</u>	
	(6.1.3.3; 6.3.1)		(6.1.3; 6.1.3.1; 6.3.1.1)		(6.1.3; 6.1.3.2; 6.3.1.1)	
5	Coordination meeting (8.2)	<input type="radio"/>				
6	Design review (8.4)	<input type="radio"/>				
7	Lateral critical speed analysis [4.4.6.2.1; 8.6.2 b)]	<input type="radio"/>				
8	Torsional analysis data (4.4.6.2.2) Analysis by: _____	<input checked="" type="radio"/>				
9	Submit test procedures and acceptance criteria 6 weeks before tests (6.3.1.4)	<input checked="" type="radio"/>				
10	Demonstrate accuracy of test equipment (6.3.1.15)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
11	Stator core test (6.3.4.1)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
12	Surge comparison test - required for all machines (6.3.4.2)	<input checked="" type="radio"/>	◁	<input checked="" type="radio"/>		<input type="radio"/>
13	Special surge test of coils (6.3.4.2.1)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
14	Power factor tip-up test (6.3.4.3)	<input checked="" type="radio"/>	◁	<input checked="" type="radio"/>	◁	<input type="radio"/>
15	Stator inspection prior to VPI (6.3.4.5)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
16	Sealed winding conformance test (6.3.4.4)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
17	Partial discharge test for machines 6kV and greater (6.3.4.6)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
18	Rotor residual unbalance verification test (4.4.6.3.4)	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
19	Unbalance response test with half coupling mass (6.3.5.3) (Purchaser must also select one of below)	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
20	<input type="radio"/> Purchaser to supply the contract motor coupling hub plus a mass moment simulator for half coupling spacer for test (6.3.5.3)					
21	<input type="radio"/> Other arrangement (Define here & refer to Datasheet Guide for this)					
22	Vibration test with half coupling (6.3.1.5) (req'd if Supplier mounts cplg. 4.4.9.4)	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
23	Inspection of equipment, piping for cleanliness before final assembly (6.2.3.3)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
24	Routine test - always required for all machines (6.3.2)	<input checked="" type="radio"/>	◁	<input checked="" type="radio"/>		<input type="radio"/>
25	Bearing dimensional & alignment checks before tests [6.3.2.1 k)]	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
26	Bearing dimensional & alignment checks after tests [6.3.2.1 l)]	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
27	Purchaser supplied vibration monitoring / recording (6.3.3.7)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
28	Complete test (6.3.5.1.1)	<input checked="" type="radio"/>	◁	<input checked="" type="radio"/>	◁	<input type="radio"/>
29	Includes: Efficiency, LR current, PF & torque, FL Current, FL Slip, BD Torque, Heat Run, Speed v. Torque, Noise test at NL					
30	DC high-potential test (6.3.5.1.2)	<input checked="" type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
31	Rated rotor temperature vibration test (6.3.5.2.1) (If not using Complete test)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
32	Bearing housing natural frequency test (6.3.5.4.1)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
33	Heat exchanger performance verification test (TEWAC enclosures) (6.3.5.5)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
34	Overspeed test (6.3.5.6; 4.1.5)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
35	Final rotating assembly clearance data storage [6.2.1.1 e)]	<input type="radio"/>	◁			
36	Material inspection (6.2.2) Radiographic test (6.2.2.2), define parts: _____	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
37	Ultrasonic inspection of shaft forging (4.4.5.1.8; 6.2.2.3.1)	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
38	Ultrasonic test (6.2.2.3.2), define parts: _____	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
39	Magnetic particle test (6.2.2.4), define parts: _____	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
40	Liquid penetrant test (6.2.2.5), define parts: _____	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
41	Hydrostatic test (6.2.2.6), define parts: _____	<input type="radio"/>	◁	<input type="radio"/>	◁	<input type="radio"/>
42	Certified data prior to shipment [8.6.2 a)]	<input checked="" type="radio"/>	◁			
43	All required test and inspection equipment (6.1.4) provided by supplier <input type="radio"/> Other: _____					

44 Notes: _____

INDUCTION MOTOR
API 541 5th Edition -- DATASHEETS
U.S. CUSTOMARY UNITS

MOTOR PROPOSAL DATA

Bold Italics = Indicate Default Selection

JOB NO. _____ ITEM / TAG NO. _____
PURCHASE ORDER NO. _____
REQ. / SPEC. NO. _____
REVISION NO. _____ DATE _____ BY _____
REV. DATE _____ PAGE _____ OF _____

Rev _____

MOTOR SUPPLIER / MANUFACTURER PROPOSAL DATA

1 Manufacturer _____ Type / Model No. _____ Frame size / Designation _____
2 Qty. _____ HP _____ RPM (Synch.) _____ Poles _____ Volts _____ Phase _____ Hz _____
3 Full Load speed _____ RPM Insulation class **F** Temperature rise _____ Class **B** Service factor **1.0**
4 Enclosure _____ Full Load torque (FLT) _____ ft-lb Rotor inertia [8.1.3 c)] _____ lb-ft² Wk² GR² GD²
5 Locked rotor torque (LRT) _____ % FLT Pull-Up torque (PUT) _____ % FLT Breakdown torque (BDT) _____ % FLT
6 **Calculated Expected Data [8.1.3 f)] at the following Loads:** For recip. comp., calc. eff. is based on pulsating current conditions from pg.6
7 Load Point 50% 75% 100% Other: _____ % Area Classification (4.1.8): Nonclassified
8 Efficiency _____ % _____ % _____ % _____ % Classified: Class _____ Group _____ Div. _____
9 Power Factor _____ % _____ % _____ % _____ % or Zone _____
10 Current _____ Amps _____ Amps _____ Amps _____ Amps Autoignition temp _____ °C or Temp.code _____
11 Guaranteed efficiencies [8.1.3 f)] at _____ % Load = _____ % Test method [8.1.3 f)]:
12 Max. sound pressure level (4.1.3): **85 dBA @ 1 m. No-Load, Full Voltage/Frequency, Sine Wave Power** Other: _____ dBA
13 Motor power source: **Sine Wave Power** ASD Power only ASD only w-bypass to utility power
14 ASD + DOL start capability ASD w-DOL start and bypass to utility power
15 Variable torque speed range: Min. speed _____ RPM _____ ft-lb Max. speed _____ RPM _____ ft-lb
16 Constant torque speed range: Min. speed _____ RPM _____ ft-lb Max. speed _____ RPM _____ ft-lb
17 Constant power speed range: Max. speed _____ RPM _____ ft-lb Avoiding lateral natural frequencies by at least 15% not
18 Method of efficiency determination to be used [8.1.3 f)]:
19 Base frequency(ies) and harmonics assumed present in the supply waveform(s) [8.1.3 f)]:
20 **Separately Powered Auxiliary Fan(s) (4.4.10.6.3): Driver Information (where applicable)**
21 Quantity _____ Location _____ Encl. _____ HP _____ RPM _____ Volts _____ Phase _____ Hertz
22 Quantity _____ Location _____ Encl. _____ HP _____ RPM _____ Volts _____ Phase _____ Hertz
23 **TEAAC Heat Exchanger Tube Material [4.4.10.8 a)]:** _____
24 **TEWAC Heat Exchanger Requirements (4.4.1.2.4):** Tube materials [4.4.10.8 b)]: **90-10 Cu-Ni** Other tube material: _____
25 Cooling water conditions **per 4.4.1.2.4 a)** Other cooling water conditions: _____
26 _____
27 **Bearings (4.4.7.1):** **Hydrodynamic (4.4.7.1.1)** Sleeve (4.4.7.1.1) Tilting pad (4.4.7.1.1) Antifriction (horizontal) (4.4.7.1.3)
28 Antifriction thrust bearing (vertical) (4.4.7.1.5) Hydrodynamic thrust bearing (vertical) (4.4.7.1.10)
29 Thrust bearing load Momentary _____ lbs Momentary _____ lbs
30 capability [4.4.7.1.11 a)] Downthrust _____ lbs Upthrust _____ lbs
Continuous _____ lbs Continuous _____ lbs
31 **Lubrication (4.4.8):** **Ring Type Self Lubrication (4.4.8.1)** Machine bearings require pressure lube system Yes No
32 Pressurized lube system (4.4.8.4) Common with driven equipment (4.4.8.5) System supplied by (4.4.8.4): Others Motor supplier
33 Type/viscosity of oil (4.4.8.5; 4.4.8.8; 5.1.4.2): _____ Oil rings included Yes No
34 Oil requirements per bearing (8.1.4): Flow: _____ GPM Pressure: _____ PSI Volume: _____ QTS
35 Heat loss to be removed per bearing: _____ kW
36 Oil mist provisions (4.4.7.4) (see Guide): Purge oil mist, hydrodynamic brg's Pure oil mist, antifriction brg's Oil mist ready, antifriction brg's.
37 Grease, Type: _____ Oil mist provisions only, a/f brg's.
38 Magnetic stator slot wedges used (4.3.10): Yes No
39 When enclosure pre-start purging is specified, vendor defined maximum allowable pressure [4.4.1.1 e)]:
40 Low ambient temperature precautions (4.4.10.4):
41 Special winterizing requirements (8.1.15):
42 Machine net weight (8.1.5): _____ lbs
43 Special tools included in proposal (4.1.11, 8.1.13):
44 Machine proposed is in strict compliance with API 541 5th edition? (8.1.9) Yes No List of applicable exceptions attached