Specification for New Pit Tempering Furnace

Spec. # 12-22-3424

Manufacturing Engineering Work Group
Watervliet Arsenal
Watervliet, New York 12189
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Department of the Army
TACOM

1. Scope:

1.0 The dedicated function of this specification is the acquisition of a heat treatment furnace equipped as herein described. All sections are specific in their intent and are not to be misconstrued as requests for options. The furnace system described by this specification shall be provided with all required equipment whether or not stated requirements are standard or optional with the furnace builder/supplier. This project is classified as a “turn-key” system with the contractor being responsible for all costs and work associated with the installation unless otherwise stated.

In this specification requirements and terminology are oriented toward the purchase of a single furnace. However, in many cases, two or more identical machine tools will be procured in accordance with this specification. In such cases, the term "the furnace" means "each furnace".

The equipment covered by this specification shall be a programmable, batch type, vertical pit heat treating furnace, to be used for air tempering operations on steel production parts of various composition, and various sizes. The furnace shall be a complete “turn key” system including all controllers, and ancillary equipment necessary to install and operate the furnace in a pre-existing heat treatment facility at Watervliet Arsenal.

1.1. Abbreviated Description: The equipment covered by this specification shall be a programmable, batch type, vertical pit, electrically heated, forced convection type, heat treating furnace. This furnace shall be required to perform air tempering operations on steel and non-ferrous metal production parts as large as 33 inches in diameter. The depth of the cylindrical work zone shall be at least 36 inches. Loading and unloading of the furnace shall be facilitated via an opening located at the top of the furnace in a vertical plane using an overhead crane. The furnace shall be a “turn key” system, and shall include all of the required control system components, including a main controller, overtemperature controller, standalone process data recording system, and any other mechanical, electrical and ancillary components required to carry out the processes defined in this description. The furnace shall also include fixturing (a part loading/unloading basket with lifting bar) constructed from a heat resistant alloy such as nickel-iron-chromium or equivalent. Temperature control shall comply with temperature uniformity standard for-class 2 of Aerospace Material Specifications 2750, revision G (AMS 2750G). The instrumentation, measurement and control system shall comply with standards for Instrumentation-class D of AMS 2750G.

2. Applicable Standards and Publications:

All work performed, and procedures followed in association with this project shall meet or exceed all applicable and current Watervliet Arsenal (WVA), Occupational Safety and Health Administration (OSHA), local, state, and federal government codes and laws relative to fire, safety, environmental, and electrical issues. These standards include, but are not limited to, AMS, ANSI, ASME, ISO, NFPA, OSHA, and SAE. The quality of all work performed, and material provided shall meet or exceed the most recent revision of applicable industry standards and engineering practices for this type of equipment and its intended function. In all instances material, quality, and workmanship shall meet or exceed OEM specifications.

3. General Requirements: All requirements are mandatory from the standpoint of intended function. Wherever a specific requirement would force an offeror to depart from his standard practice or configuration, the Arsenal will accept, for evaluation, alternative offers for achieving the intended function. Any such alternative offers must be accompanied by sufficient technical information to allow the evaluator to reach a definite conclusion that the alternative is equal to or better than the criteria specified in this document. The equipment specified in this document shall be a standard product of the manufacturer and shall require either no design changes, or if required, minor design changes to meet the requirements of this specification. Therefore, ownership of the design shall remain with the manufacturer. Equipment incorporating new or unproven technology is subject to rejection at the discretion of the Contracting Officer.

NOTE: Not all general requirements listed in section 3 shall be applicable to every machine. If a section is non-applicable, the offer is still in compliance. Please note in the attached Offeror's Statement of Compliance if a section does not apply with the offered machine.

3.1. Design and Engineering: The equipment specified in this document shall be designed and engineered in accordance with the most recent revision of each standard, recognized by the Association for Manufacturing Technology, as well as the Industrial Heating Equipment Association.

3.2. Materials and Components: Materials and components incorporated in the construction of the equipment specified herein shall be new, free from defects, and conform to the specifications and standards included within this specification.

3.3. Construction: All parts of the equipment specified in this document shall be new, unused, and constructed to be capable of withstanding all conditions encountered (static loads, thermal expansion, temperature variations, and pressure variations) during operations to the equipment's maximum factors of safety for each design criteria. The structure and assembly of the machine and its components shall be sufficiently rigid that the finished workpiece characteristics (e.g. hardness, material properties) are not impaired by machine vibrations, thermal effects, or other conditions encountered during the normal course of operation of this furnace.

3.3.1. Workmanship: Workmanship throughout the equipment specified in this document shall be free from irregularities or defects that could adversely affect performance or durability.

3.3.2. Castings and Forgings: All castings and forgings shall be free of defects, scale, and mismatching. Weldments, if used, shall be braced, ribbed and gusseted to obtain strength equal to or better than the strength of castings, and shall be properly stress relieved.

3.4. Workmanship: Workmanship throughout the construction and assembly equipment specified herein shall be free from irregularities or defects that could adversely affect performance or durability.

3.5. Maintainability: All equipment components offered that are subject to wear, distortion or failure and all parts which require periodic adjustment shall be accessible for replacement or adjustment. The contractor shall provide Instructions for the Maintenance and Adjustment of Equipment Components for the preventative maintenance and adjustment of these parts shall be clear, concise and definitive in accordance with (IAW) Contract Data Item List (CDRL) A001.

3.6. Interchangeability: All parts offered that bear the same part number shall be interchangeable.

3.7. Applicable Power Source: The power source to which the furnace will be connected furnishes a nominal 480 volts, 3 phase, 60 Hz AC. However, the furnace shall be tolerant enough of line fluctuations to operate normally at source voltages ranging from 432 to 504 volts.

3.7.1. Electrical Safety Devices: The furnace and its equipment shall be protected with circuit breakers which comply with National Electrical Manufacturer's Association (NEMA) standards for thermal magnetic types and shall have a minimum interrupting capacity of 25,000 Root Mean Square RMS symmetrical amperes for 480 volt, 3-phase system. Breaker terminals shall be UL listed as suitable for the type of conductors provided. Plug in circuit breakers or current limiting fuses are not acceptable.

3.7.2. Conversion Equipment: If DC or reduced voltage AC is required to meet any specified requirement, the necessary conversion or transformation equipment shall be provided by the contractor. All transformers must meet efficiency levels specified in CFR Title 10 Chapter II Part 431 (also known as DOE 2016 Efficiency Levels). Equipment which requires a high quality constant power source shall have proper isolation and/or power conditioning equipment for the power service designated in this description. All electrical equipment shall have a power factor (ratio of real power to apparent power) of no less than 80%, as read at the equipment main disconnect. Equipment with a power factor of less than 80% shall be fitted with suitable power factor correction capacitance, sized on the basis of the equipment inductive AC load.

3.7.3. Operator Control Voltage: All electrical controls meant for use by the operator of the machine shall carry 120 volts AC maximum.

3.7.4. Utility Outlet: The furnace electrical cabinet shall be provided with a 120 volt, single phase, spec grade 20 ampere, single duty receptacle, weatherproof bi-metallic box, "in-use cover", dual receptacle, and 3 wire utility outlet. This outlet shall be protected by a ground fault interrupter and shall be externally mounted on the operator control panel. A noise suppression device for this circuit shall be provided.

3.7.5. Cabinet Enclosure for Electronic Equipment: All separate electrical hardware/circuitry are to be housed in a NEMA 12 rated enclosure/cabinet. Should forced ventilation be necessary to maintain the interior of the enclosure at a temperature to ensure good product reliability, filtered air shall be forced into the cabinet to maintain an over pressure condition in the cabinet. Cabinet shall not inhibit operator access to the controls and/or adjustments.

3.7.6. Interconnecting Wiring: All control functions shall be pre-wired by the contractor. This includes wiring from the furnace control system to the interface and from the interface to the furnace. If any disassembly of the machine tool and associated control wiring is necessary for shipment from the contractor's plant, the contractor shall rewire the system at the Arsenal unless a clearly labeled plug and socket system is employed. The Arsenal will not perform detailed control wiring. All wiring shall comply with accepted Joint Industry Code (JIC), National Machine Tool Builders Association (NMTBA), and National Fire Protection Association (NFPA) Standards.

3.8. Motors: All motors provided shall be of the type and horsepower rating to meet the specified requirements based on all applicable engineering practices and standards. All motors shall be rated for continuous duty. Motors shall not operate in an overload condition during normal operation of the equipment and shall be equipped with thermal overload protection. Motor starters and controls shall operate at 24 VDC. Motor starters shall provide drop out protection. This means that in the event of power loss, the equipment shall be re-energized only by deliberate action of the operator. Manual or mechanical motor starters are not acceptable. All motors shall be housed in enclosures of the appropriate NEMA type for class and severity of service. All AC unidirectional motor housing shall bear a directional arrow to indicate proper rotation direction when correctly wired. All AC motors rated at 25 horsepower or greater shall be equipped with a “soft start” mechanism which provides for reduced voltage starting. All polyphase AC motors rated at 1 horsepower or greater shall be tested per IEEE Standard 112-Method B and must meet premium efficiency requirements per NEMA MG 1-2006 Table 12-12 or IE3 9IEC 60034-30:2008. All motors are to be permanently lubricated and sealed.

3.8.1. Motor I.D. Plates: Each motor shall bear an identification plate containing the identity of the manufacturer, model number, serial number, input voltage, amperage, horsepower, phase, frequency, duty cycle, and frame size or mounting identification IAW CDRL A002.

3.9. Safety and Environmental Requirements: The contractor shall review the environmental requirements documented in Enclosure D of this document and comply as required.

3.9.1. Protection of Furnace Operator: Protection of the furnace operator and other personnel shall be accomplished in accordance with the standards listed in Enclosure E.

3.9.2. Protection of the Furnace: The furnace shall be designed and equipped in accordance with the standards listed in Enclosure E to prevent self-damage in the event of malfunction and ordinary operator negligence.

3.9.3. Noise Levels: Noise levels at a distance not exceeding one meter from the nearest point on the furnace shall, under no circumstances, exceed a maximum of 85 dba when measured by a calibrated sound level meter set for "A" weighting and slow response. Any shields, baffles, enclosures or other devices required to bring the machine into conformance with this noise level requirement shall be provided by the contractor. Any such devices shall not interfere with the

operation of the machine and shall be designed to preserve the visibility needed for safe operation and ease of maintenance.

3.9.4. Ozone Depleting Substances: Section 326 of Public Law 102-484 precludes the Dept. of Defense from awarding any contract that directly or indirectly requires the use of a class I ozone depleting substance within the Government specification or standards set forth in the contract. Enclosure B is a list of the restricted Class I CFCs and Halons. All shall be replaced by new functionally equivalent substances or systems that are approved for use by the Environmental Protection Agency (EPA) and have an "Ozone Depletion Potential" (ODP) rating of zero. Ozone Depletion Potential (ODP) is defined as the relative capacity of a substance, per unit weight, for destroying the earth's stratospheric ozone layer, in comparison with CFC 11, CFC 12 and CFC 114, each having been assigned an ODP of 1.00.

NOTE: The contractor is responsible for obtaining and adhering to the most current list of prohibited substances.

3.9.5. Asbestos and Mercury Free Certification: All materials utilized in the system shall be certified as asbestos and mercury free unless substitute materials do not exist. This certification shall be provided prior to machine delivery IAW CDRL A003.

3.9.6. Material Safety Data Sheets: The offeror shall provide Watervliet Arsenal with all material safety data sheets IAW CDRL A004.

3.9.7. Lead Free and Chromium Free Paint Certification: All paints and primers applied to the system shall be certified as lead free and chromium free. Lead based paint is paint that contains more than six one hundredths of one percent (0.06%) lead by weight. This certification shall be provided prior to machine delivery IAW CDRL A005.

3.9.8. PCB Free Certification: To the extent that the machine is charged with lubricant or hydraulic fluids at the contractor's plant for preliminary acceptance inspection, these fluids shall not contain Polychlorinated Biphenyl’s (PCBs). The machine and its equipment shall be certified as PCB free and certification shall be provided prior to machine delivery IAW CDRL A006.

3.9.9. Lockout/Tagout Procedures: The manufacturer shall provide the control of hazardous energy (lockout/tagout) per OSHA 29 CFR 1910.147 IAW CDRL A007. This information shall be incorporated into the Instructions for the Maintenance and Adjustment of Equipment Components IAW CDRL A001. Contractor shall ensure employees are trained so they know, understand, and follow the applicable provisions of the hazardous energy control procedures. The control of hazardous energy sources includes but is not limited to electrical, pneumatic, hydraulic, chemical, mechanical, UV, electromagnetic and thermal energy.

3.10. Data Plates: All instruction, data, and identification plates and labels attached to this equipment and its controls shall be manufactured of corrosion and oil resistant metal or plastic material. All wording shall be in the English language using plain, bold face lettering. Lettering shall be permanent and have a contrasting background.

3.11. Identification Plate: A corrosion resistant metal plate shall be securely attached to the machine in a location visible to the operator's workstation. This plate shall bear, as a minimum, the information called for below, with space at the bottom of the plate for the addition of one line of information to be applied by the government. IAW CDRL A008.

A. Nomenclature
B. Manufacturer's name
C. Model
D. WV# (Please contact the Watervliet Government Representative to receive this number)
E. Manufacturer's Serial Number
F. Power Input (voltage, phase, frequency, and full load amps)
G. Government Contract Number
H. Date of Manufacture

3.12. Utility Connections: Equipment supplied to the Watervliet Arsenal shall have a single point shut off for each utility supplied to the system. This single point shut off will be referred to as the "point of first connection". Each type of power source shall have only one point of first connection. Each point of first connection shall be clearly labeled on the system and shown in the safety Lockout/Tagout Procedures (IAW CDRL A007). These points of first connection shall be located on a stationary component and positioned so that they shall not create a hazard to personnel during normal operation of the system. The first connection-point shall be accessible from the shop floor without the use of ladders, steps, or stools. Access to this first connection point cannot be obstructed or hampered by operation of the system, in the event of a safety incident requiring the main power to the machine to be shut off in an emergency.

3.13. Utility Connection Labor and Requirements: Watervliet Arsenal will provide a utility connection between first point of connection for all utilities (electrical, air, water, etc.) on the equipment, and the facility. Only one "facility side" connection per utility type will be provided. All other additional or ancillary utility connections shall be provided by the contractor.

3.13.1. Electrical: The WVA power source that the specified equipment will be connected to will be a nominal 480 volts, 3 phase, 60 Hz AC voltage. However, the machine shall be able to operate normally at source voltages ranging from 432 to 504 volts. The WVA power source does not include sub-panels, filters, surge protection, or any peripheral equipment necessary to make the equipment functional.

NOTE: Contractor shall state required power/electrical requirements for offered machine. See Enclosure C – Electrical Survey and complete (IAW CDRL A009).

3.13.2. Pneumatics/Air: If air is required for any furnace operation or function, the furnace shall be fully equipped with all required components, fully installed to the point of connection of WVA shop air. Shop air at the Arsenal is 85 psi with above normal moisture and contaminant levels. If higher or lower pressure is required at the machine or a different air flow rate is needed, the machine shall be fully equipped to modify the supply pressure and volume.

The machine shall also be equipped to remove the above normal moisture and contaminant levels. Normal moisture is defined as that moisture produced when air at a relative humidity of 75% has been compressed to 85 psig. The equipment's nominal and maximum compressed air usage rates in CFM shall be provided to the Watervliet Government Representative.

3.13.2.1. Air Booster Unit: If the equipment offered requires more than 85 psi at the volume for operation of the equipment, then an air booster unit shall be provided with the machine. If operation of the equipment requires an accumulator tank, it shall be provided with the booster.

3.13.2.2. Air Dryers/Filtration: If the offeror determines that on the furnace, air dryers are required to maintain moisture levels the air dryers shall have a regenerative type desiccant or refrigerated compressed air dryer capable of drying air down to 35°F pressure dew point, minimum, from air entering the equipment at 110°F. The air dryer shall supply air at the required standard cubic feet per minute (SCFM) of the equipment. The air dryer shall purge condensate automatically. In the case of a refrigerated air dryer, the refrigerant used shall not be a Class I ozone depleting substance. The air dryer shall be connected and piped to the equipment by the contractor. All air dryer designs are to be supplied by manufacturers participating in the CAGI Refrigerated Dryer Performance Verification Program and have been tested and rated in accordance with CAGI ADF 100. Power for the refrigerated air dryer unit shall be 110 Volts Alternating Current and shall be wired and powered through the machine electrical system.

NOTE: Industrial Air dryers need to be compatible with the existing Watervliet Arsenal compressed air network. Common industrial air dryers that are used at the Watervliet Arsenal include the ZEKS brand, HSE brand, and Ingersoll Rand brand D31NC models to ensure cross compatibility with existing components on the Watervliet Arsenal's compressed air system.

3.14. Lubrication: The furnace shall be equipped to provide lubrication to every moving part where lubrication is essential to prevent damage.

3.14.1. Lubrication Plate: A lubrication plate shall be permanently fastened to the machine and shall clearly indicate the type and viscosity of lubricant and the service interval for all automatic and manual lubrication reservoirs and fittings. The plate shall include a simple diagram which depicts the physical location of all lubrication points on the machine structure IAW CDRL A010.

3.14.2. Lubricants, Hydraulic Fluids, Oils and Coolants: Watervliet Arsenal has established a standardized list of lubricants, hydraulic fluids, oils and coolants. The contractor shall choose the required lubricants, hydraulic fluids, oils and coolants from Enclosure A, enclosed or where there is a designated equivalent. If a substitute is required, the contractor shall provide at the time of machine delivery, a justification which shall include the manufacturer, type and specification number as well as the reason for the substitution. A list of all fluids required to operate the machine shall be provided to the Arsenal 30 days prior to delivery IAW CDRL A011.

3.14.3. Control of Heat Transfer Fluids: For any heat exchangers/ thermal regulation systems which require a working fluid, the heat exchanger/thermal regulation system shall operate in a sealed, closed loop and shall not consume water or other fluids. The contractor shall ensure that this subsystem is designed and equipped to prevent heat transfer fluids from escaping the confines of the machine and leaking to the floor during normal operation of the furnace. Any connections shall be designed to withstand the thermal expansion/contraction which is produced by the furnace during operation within its rated design temperatures. Any components of the system such as tubing, o-rings, gaskets, and heat exchangers, shall comply with the applicable ASME/TEMA design standards e.g. applicable factors of safety for the type of heat exchanger (e.g. Shell in Tube, etc.).

3.15. Hydraulic System: If the furnace is equipped with any hydraulic system, such as a lifting device for the furnace cover, hydraulic systems provided shall be sized and powered for the intended application and shall conform industry standards. The system shall incorporate cleanable or replaceable filtration devices to insure fluid cleanliness. Reservoirs shall be equipped with easily visible gages to indicate fluid level. If duty cycle of the system under maximum usage will cause the hydraulic fluid to exceed 120°F in temperature, a suitable heat exchanger shall be provided to maintain fluid temperature at or below this level. The system shall be protected against overpressure as well as under pressure. System pressure in any hydraulic device shall be as low as is practical for the intended application but shall not exceed 3000 PSI in any case. In any system which utilizes hydraulics to produce thrust or direct linear motion, anti-surge devices or circuits shall be incorporated to insure uniformity of motion under varying loads. These devices or circuits shall be adjustable. All reservoirs shall be easily accessible for cleaning and flushing and shall be located at floor level.

3.16. Painting: All exterior furnace surfaces shall be painted except where bright metal is required for furnace function or to otherwise adhere to the requirements of this specification. Paint shall be chromium-free and lead-free. Quality and manner of application shall afford protection throughout the normal life of the machine. Paint color shall be “semi-gloss”, and the paint color will be selected by the Government, from a list of standard colors supplied by the contractor IAW CDRL A012. This selection shall be made after contract award. Danger areas shall be painted red and caution areas shall be painted yellow in accordance with OSHA Standard 1910.144. Appropriate warning signs, tags or emblems shall be affixed to respective areas of the machine in accordance with OSHA Standard 1910.145.

3.17. Furnace Hold Down and Leveling: The furnace base shall be provided with a mounting hole quantity and location for positive hold down when operating at full rated capacity. In addition, for each hole in the machine base, the contractor shall provide a set of recommended hold down and leveling hardware. If grouting is required, it shall be provided by the contractor.

NOTE: All hold down and leveling hardware shall be delivered 30 days prior to the scheduled delivery of the machine.

3.18. Gears: All gears used in the machine and its components shall meet or exceed the standards recommended by the American Gear Manufacturers Association for the type and severity of service required.

3.19. Moving Parts: Any handwheels, levers, or knobs incorporated in the design and construction of the furnace shall be not impede in the safe operation of the furnace during required motions such as the opening or closing of doors, lids, etc. Any such devices shall not have sharp edges, protrusions, or grip points which could pose a hazard to the operator. Any moving or rotating parts shall conform to OSHA standards for machine guarding to protect the operator from occupational hazards such as in-running nip points on handwheels, gears, etc.

3.20. Technical Data: All data shall be in the English language and shall be furnished in accordance with the quantities, formats and delivery dates below. All data shall be packaged and delivered separately from the furnace itself, marked to the attention of the Watervliet Government Representative. The contractor shall provide full documentation in the form of "as built" drawings and manuals. Drawings shall not be generic or sub-assembly prints. A "hardcopy" refers to a reproducible printed, paper copy. An "electronic copy" refers to a document saved on CD. All AutoCAD drawings shall be provided in AutoCAD version 2014 or later, shall be of one-to-one scale, shall be dimensioned in English units, and shall not utilize the color yellow. "On-line" technical data shall not be acceptable as the sole means of providing technical data for any of the systems provided. The Government contract number and the Watervliet WV# shall be printed in a conspicuous place on the covers of every manual, on each drawing/schematic, and on all disks/CDs provided.

3.20.1. Foundation Drawings, Standard or Special: If the furnace requires a special foundation, the vendor shall provide foundation drawings. These drawings shall be complete in all construction detail to permit pricing and construction by a general contractor and shall be furnished as soon as possible after contract award and no later than 30 days after award. All drawings shall be dimensioned in English units and text shall be in the English language. One reproducible hardcopy and one electronic copy on CD in AutoCAD .dwg or .dxf format shall be provided. AutoCAD drawings shall not utilize the color yellow or any other colors that cannot be made readily visible when plotted out in color. When drawings are finalized, the contractor shall certify the accuracy of the drawings by providing a stamped and signed hard copy of the drawings to the Watervliet Government Representative IAW CDRL A013.

Typical floor thickness at Watervliet is 8"-10". A special foundation is one which exceeds thickness, load bearing capability and vibration insulation of Watervliet Arsenal's standard monolithic concrete flooring of 1,000 pounds per square foot load rating and/or one which requires a specific thickness, specifically shaped excavations for coolant housings, process piping, electrical circuits and conductors, etc. The soil (substrate) for a foundation is assumed to be medium dense gravel or medium dense gravel and sand with a minimum bearing capacity of 4,000 PSF. Although 4,000 PSF is the assumed minimum bearing capacity, there may be variations depending on the exact location of the machine. The contractor shall contact the Watervliet Government Representative to ensure that the minimum PSF and other requirements are accurate. If the contractor states no foundation is required and does not ensure the minimum PSF in the area and the furnace causes damage to floor and requires a foundation after initial installation is attempted, the contractor shall be responsible for all costs associated with floor repair, relocation of the machine, and reinstallation of the machine. Should the contractor disturb

the soil below the yet to be constructed concrete foundation then the contractor shall compact the disturbed soil to achieve at least 2,000 pounds per square foot (PSF) bearing capacity.

3.20.2. Furnace and Equipment Floor Plan: Offerors shall provide a floor plan which depicts the layout and locations of all required equipment to install and operate the furnace. The furnace and equipment floor plan AutoCAD drawings shall contain information that indicates the type, magnitude, and connection points of all plant utilities required to operate the furnace. The top view AutoCAD drawing shall depict the furnace, foundations, feet/anchor locations, anchor requirements, grounding, all ancillary equipment, and all necessary clearance requirements for normal use and maintenance IAW CDRL A014.

3.20.3. Catalog of Standard Furnace Tooling and Accessories: Catalog shall be furnished 30 days after award of contract. For offers of foreign built furnaces (i.e. machines built outside the United States, its possessions or Canada), the catalog shall set forth U.S. domestic sources of supply IAW CDRL A015.

3.20.4. Non-Standard (Special) Furnace Tooling and Accessories: To the extent that this specification requires the development of unique tooling and accessories not generally available commercially, a set of drawings and specifications to permit manufacture of such tooling and accessories shall be furnished at the time of machine delivery IAW CDRL A016.

3.20.5. Installation Instructions and Drawings: Instructions outlining the requirements for installation of the equipment shall include a drawing containing the certified dimensioned locations of all equipment mounting/anchor holes. These documents are to be furnished 60 days prior to scheduled delivery IAW CDRL A017.

3.20.6. Lubrication Diagram and Instructions: To be delivered to the Watervliet Government Representative at time of machine delivery IAW CDRL A018.

3.20.7. Furnace Operating Instructions: These instructions shall be provided in separate manuals from other technical data provided. To be delivered upon machine delivery IAW CDRL A019.

3.20.8. Maintenance and Troubleshooting Instructions: To be supplied for all furnace and control systems. These instructions shall include the furnance's mechanical assembly and wiring drawings. To be delivered at time of machine delivery IAW CDRL A020.

3.20.9. Electronic and Hydraulics Schematics: To be considered acceptable, these schematics shall clearly portray all "as built" electrical and hydraulic ties to their respective main systems. To be delivered at time of machine delivery. Wiring diagrams used to do the initial power hookup shall be included furnished no later than 90 days after award IAW CDRL A021.

NOTE: If, during installation and testing, the actual electrical and hydraulic systems are configured differently than depicted on the schematics, receipt of the revised "as built" schematics shall be a condition of final acceptance.

3.20.10. Repair Parts Catalog: This catalog shall encompass every replaceable part in the machine and shall include identification and original equipment manufacturers part numbers and ordering data. Items which can normally be purchased locally may be so indicated provided they are sufficiently described. The repair parts catalog shall include illustrations which clearly locate parts within larger subassemblies. To be delivered at time of machine delivery IAW CDRL A022.

3.20.11. Program Manuals: For all controllers supplied with the furnace, programming manuals shall be supplied. These manuals shall include a clear summary of the control functions actually implemented and usable on the system specified. To be delivered at time of machine delivery IAW CDRL A023.

3.20.12. Software Documentation: The offeror shall provide documentation of all system software and ladder logic developed to control and interface with the control/drives with the furnace tool. (One hardcopy and one electronic copy) One copy of the system memory backup (S-Ram) shall be provided on compact flash drive at startup of furnace. To be delivered 30 days after delivery of the machine IAW CDRL A024.

3.21. Training Required: The contractor shall be responsible for providing training of WVA personnel. The type and extent of training shall depend upon whether the furnace specified is equipped with numerical control. All instructions and materials, oral or written, shall be in English. "On-Site" means "At Watervliet Arsenal" and "Off-Site" means "a location within the U.S. away from Watervliet Arsenal as determined and arranged for by the contractor". If specialized formal “off-site” training is available, specify on offer, availability and price as an option. The quality of the training shall be such that at the conclusion of the specified training time, each individual within their assigned category shall be capable of repairing or operating the machine to its productive capacity. Training shall be in accordance with the applicable areas of the schedule below IAW CDRL A025.

Type of training	Number of persons	When required	Training location
Furnace operation	4	During or after furnace performance testing	On site
Mechanical maintenance	2	During startup	On site
Hydraulic maintenance (if applicable)	2	During startup	On site
Electrical maintenance	2	During startup	On site
Electronics (CNC) maintenance	2	During Installation	On site

Spindle/Axes Drives (if applicable)	2	During Installation	On site
Programming training	2	During Installation	On site

NOTE: For all types of training, the associated technical data (see section 3.20) shall be on hand at the time of instruction and its use and interpretation shall be covered during the training.

3.22. Repair/Replacement Parts and Service: The offeror shall provide parts and service for the contracted equipment within 72 hours of notification of a problem. The offeror shall agree, as part of the contract, to store complete ordering data to include specifications (e.g. critical subsystem parameters and specifications), engineering drawings and other information for the contracted furnaces/parts. This data shall be stored within the U.S. or Canada and available to the Government at its request IAW CDRL A026. The contractor shall supply a list of recommended spare furnace parts (e.g. belts, filters, gaskets, fluids, and wear items) IAW CDRL A027. Watervliet Arsenal recognizes that it may be hard to fulfill this requirement for major furnace components. If the requirement cannot be adhered to, the offeror shall notify the Watervliet Government Representative within two business days and shall provide a delivery schedule to be approved by the Watervliet Government Representative.

3.23. Special Tools: If any element of furnace operation or maintenance requires the use of specially designed tools, these tools shall be provided with the furnace and shall become the property of the Government.

3.24. Site Conditions: The furnace covered by this specification shall be installed in a dedicated heat treat facility, with the presence of smoke, fumes, dust, and high temperatures. As such, there will be no environmental conditioning. Temperatures will range from 65° F to 100° F and relative humidity will range from 20% or less to 95%. On any given day, the temperature in the furnace shop may change as much as 8° F per hour. These are the conditions under which the furnace is expected to perform as specified, and the contractor shall be responsible for supplying what is required to meet the specified performance. The only permissible exception is positioning accuracy for numerically controlled furnaces. For this performance factor, allowances may be made for the effects of temperature fluctuation.

3.25. Heat Exchange Equipment: Heat exchange equipment shall be provided with the furnace wherever it is needed to keep operating temperatures within design or specified limits. Any heat exchange equipment using water as the heat exchange medium shall be fully recirculating and shall not require the continuing input and discharge of Arsenal water supply. Wastewater systems of any type are not acceptable. Furthermore, it is the Arsenal's preference to avoid heat exchange equipment making use of the refrigeration cycle, and refrigeration systems of any kind are not acceptable unless design or specified temperature limits cannot be achieved without them. If a refrigeration system is absolutely necessary, the contractor shall ensure that it operates properly using a refrigerant having an ozone depletion potential of zero. The contractor shall be responsible for identifying and providing such a refrigerant and its material safety data sheet.

3.26. Heat Shielding: Any process heating equipment shall be provided with adequate guarding and operator protection, including the appropriate clearances, in accordance with ASME, API, OSHA, and NFPA codes for the heating processes used.

3.27. Elapsed Time Meter: The furnace shall be fitted with a meter to measure operating time of the furnace heating elements. The time totalizing meter shall be of the non-resetting type and shall have a range of 0 to 99,999 hours in increments of 1 hour. 1-hour being the least significant digit. Upon reaching the maximum accumulative hours the meter readout shall automatically revert to zero and continue to totalize time. The meter shall be designed to prevent the entrance of dust and moisture and shall be mounted to withstand shock and vibration generated by the equipment. The meter shall be located as to be readily visible but not subject to abuse relative to the operating environment of the equipment. Time meters resident in the numerical control unit are unacceptable.

3.28. Enclosures: All new controller hardware shall be provided with new electrical enclosures. Enclosures to be located in explosive, high dust, paint or heavy industrial manufacturing environments, and shall be NEMA 4X rated. All other locations shall be NEMA-12 rated. In addition, if required, given shop environmental conditions as detailed in section 3.24, new control system enclosures for electronic circuitry shall be air conditioned and air filtered to maintain constant temperature, to reduce humidity and to prevent contamination of control boards and other critical system components. Air conditioning units shall not utilize Ozone Depleting substances. New enclosures shall be painted with a color as close to the painted color of the original machine tools as possible.

3.29. Piping: All pipe work performed by the contractor shall be to the specifications below.

A. All equipment piping shall be identified per ANSI/ASME A13.1 or equivalent.
B. Brazing filler metal shall conform to AWS A5.8/A5.8M, Type BAg-5 with AWS Type 3 flux, except Type BCuP-5 or BCuP-6 may be used for brazing copper-to-copper joints.
C. Welding work for new piping systems shall be in conformance with ASME B31.9. The welding work includes: brazing procedures, brazers, brazing operators, and nondestructive examination personnel; maintenance of welding records, and examination methods for welds.
D. Pipe hangers, inserts, and supports shall conform to MSS SP-58 and MSS SP-69, except as supplemented and modified herein.
E. Pipe hangers and supports shall conform to MSS SP-58, MSS SP-69, and ASME B31.1, except as specified or indicated otherwise. Piping shall be adequately supported to eliminate sag and weak points and allowance for thermal expansion must be considered on long pipe runs.
F. All piping, tubing and fittings shall be in strict accordance with manufacturer's requirements and recommendations to include industry standards and applicable codes (ANSI B16 and B31.3).
G. Process piping shall be ASTM 312, 304 stainless steel, seamless.
H. For pressure above 150 psi, SCH80, pipe shall be used where threaded connections are made. At pressure above 2000 psi, SCH 160 pipe shall be used where threaded connections are made.

I. Joints in piping system shall comply with ASME B31.3 to include the use of welded fittings. Gaskets and sealants shall also comply with ASME B31.3.

J. Prior to acceptance and initial operation, all piping shall be inspected, and pressure and leak tested in accordance with ASME B31, Code for Pressure Piping, and Section 705 of the IFGC.

4. Furnace Installation and Startup:

4.1. Work Performed by the Arsenal:

4.1.1. Site Designation: Upon receipt of the required installation and foundation drawings (see section 3.20), IAW CDRL A013, Watervliet Arsenal will designate an installation site and outline a general machine location on the shop floor. The Watervliet Arsenal will not perform any floor work or other work related to the machine except for ensuring the area where the machine will be installed is cleared.

4.1.2. Utilities: Once the furnace is installed, positioned and rough leveled by the contractor or their designated rigging crew, Watervliet personnel will run utilities to a single first point of connection for electrical and a single first point of connection for air. Watervliet must be provided with sufficient time to accomplish these connections. Sufficient time may be up to 3 working days depending on Watervliet personnel availability. However, if the installation instructions supplied by the contractor are incomplete or insufficiently detailed, installation work will stop and the contractor shall be required to dispatch a service engineer. Installation shall resume upon their arrival and continue under their guidance.

NOTE: If installation instructions, electrical and hydraulic schematics are not delivered at or before the times specified (see section 3.20), the Government reserves the right to forestall delivery and/or final acceptance testing of the machine by an amount of time equal to the delay in receipt of instructions, drawings or schematics.

4.2. Work Performed by the Contractor: This project is classified as a “turn-key” system with the contractor being responsible for all costs and work associated with the installation unless otherwise stated. The contractor shall be solely responsible for all costs associated with skidding and shipment, rigging, and installation at WVA. Contractor personnel shall adhere to the WVA requirements to wear OSHA approved non-tinted safety glasses with side shields, to wear safety shoes, and to refrain from wearing loose clothing (i.e. “hoodies”) and jewelry while in the manufacturing shop areas. The contractor shall ensure they bring all equipment/material necessary for the installation of the machine. The contractor shall remove from WVA and dispose of all wastes (other than hazardous wastes) generated from uncrating, unpacking, and installing the machine at a permitted off-post disposal facility, in accordance with Enclosure D of this specification and the document "WATERVLIET ARSENAL (WVA) INFORMATION FOR CONTRACTORS" which is available on the Watervliet Arsenal website. All labor for the installation of material and equipment furnished under this Contract shall be done by

experienced personnel. All workmanship shall be free from any defect materially affecting appearance or serviceability and in compliance with the specific requirements of the Scope, Drawings and Specifications. If any of the contractor's services do not conform to the Contract requirements, the Government may require the contractor to perform the services again in conformity with the contract requirements at no additional cost. The contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all construction and other services furnished under this Contract. Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its construction and other services.

4.2.1. Site Preparation: Once an installation site is identified by Watervliet personnel and if required, a foundation or platform is constructed, the contractor or their designated third party shall layout the machine. Please note that the majority of the Watervliet Arsenal's shop floor is covered with 2.5" thick wood block. The contractor shall be responsible for the removal of wood block flooring and existing concrete preparation. Contractor shall also be responsible for securing wood block flooring and install any leveling pads necessary for installation.

4.2.2. Site Visit: A site visit to the Watervliet Arsenal is highly encouraged. The purpose of the visit is to observe how the process and use of the machine is currently at the Arsenal, so that the machine can be constructed with the process in mind. It shall also allow the contractor to see the location of the machine and determine how to rig it into place.

4.2.3. Rigging: The contractor shall arrange for rigging services to off load the machine and contractor personnel shall be on site at Watervliet when the machine arrives and is off loaded to supervise the placement of the machine on the installation site by the rigging service. Outside rigging services shall be advised that only certified grade 8 chains are permitted to be used at the Arsenal and that all rigging slings must be tagged and certified for the weights being lifted. Only propane powered forklifts are permitted and forklifts must also be equipped with a roll cage. Operators of forklifts shall have and be able to produce valid forklift licenses IAW CDRL A028. The contractor shall ensure they bring all equipment and material necessary for the rigging of the machine. If necessary, the Watervliet Arsenal will provide the contractor with information for local rigging companies. Any crane truck or lifting equipment used for the installation works shall be inspected and certified as required by applicable regulations. Ensure full compliance with OSHA (CFR 1926) regulations as applicable as well as any other applicable regulation and Federal.

4.2.4. Installation: Once the furnace is positioned and rough leveled by the contractor, the contractor, through his own service personnel, shall be fully responsible for the startup and testing of the machine, conducting any acceptance tests specified, and performing the required onsite training. The contractor shall provide competent, English speaking service personnel to install the machine, rough and finish level the machine, startup, and conduct the acceptance tests. The contractor and the service personnel shall remain until the machine activation and testing have been successfully completed. Under no circumstances shall the contractor plan on Arsenal assistance for diagnosis, troubleshooting or repair of the equipment during activation and testing. If the contractor chooses to request Arsenal assistance in lieu of providing their own resources, the request will be reviewed by the Watervliet Government Representative who shall reserve the

right to impose a charge for the assistance. Approvals, even on a charge basis, shall not be taken for granted since there is no guarantee that appropriate Arsenal personnel will be readily available. In such cases, the Arsenal will not be held responsible for delays in acceptance of the equipment resulting from non-availability of Arsenal personnel or Arsenal furnished equipment. If the contractor requests Watervliet Arsenal to ship miscellaneous material via UPS, FedEx or by other similar carrier then the contractor shall provide their carrier account number for this purpose.

NOTE: Under normal circumstances the contractor will be allowed to work as long as is desired during normal work days. Contractor work outside Watervliet's normal work days cannot be guaranteed. Watervliet is on a condensed work schedule. Normal work hours/days for this schedule are four 9-hour workdays (Friday off) one week and four 9-hour days, one 8-hour day (Friday) the following week. Contractor work on the Friday off and weekends cannot be guaranteed. Contractor's classified as foreign nationals may further restrict work hours and days available.

4.3. Project Safety: Throughout the duration of the project, the contractor must maintain a safe working environment for both the contractor's and WVA's personnel. This shall include, but not limited to, sections 4.3.1 and 4.3.2.

4.3.1. Safety Fencing: If applicable, the contractor shall provide temporary safety fencing around the work area within five (5) business days of work beginning at the Arsenal. The contractor shall maintain the safety fencing for the duration of the contract work and remove the safety fencing within five (5) business days of Government acceptance of the completed work. The type of safety fencing used (barrier, mesh and pole, etc.) shall be subject to approval by the Watervliet Government Representative. Signage shall be posted notifying all personnel that no foot traffic is allowed.

4.3.2. Safety Systems: Protect the integrity of all installed safety systems or personnel safety devices. The contractor shall obtain prior approval from the Watervliet Government Representative if entrance into systems serving safety devices is required. If it is temporarily necessary to remove or disable personnel safety devices in order to accomplish Contract requirements, the contractor shall provide alternative means of protection prior to removing or disabling any permanently installed safety devices or equipment and obtain approval from the Watervliet Government Representative.

4.4. Denial of Entry: The equipment purchased in this specification shall be installed on a secure military base. As such, all visitors to the base shall be subject to denial of entry. This applies to riggers, technicians, trainers, company employees, and anyone else who would need to come on site. If this person is not a citizen of the United States of America (foreign national), they will be denied access without obtaining prior approval. If a foreign national must be sent to work on this equipment, a request shall be made to the Watervliet Government Representative at least 30 days in advance.

5. Furnace Specific Requirements:

5.1. Furnace Description: The equipment covered by this specification shall be a programmable, batch type, vertical pit, electrically heated, forced convection type, heat treating furnace. This furnace shall be required to perform air tempering operations on steel and non-ferrous metal production parts as large as 33 inches in diameter. The depth of the cylindrical work zone shall be at least 36 inches. Loading and unloading of the furnace shall be facilitated via an opening located at the top of the furnace in a vertical plane using an overhead crane. The furnace shall be a "turn key" system, and shall include all of the required control system components, including a main controller, overtemperature controller, standalone process data recorder, and any other mechanical, electrical and ancillary components required to carry out the processes defined in this description. The furnace shall also include fixturing (a part loading/unloading basket with lifting bar) constructed from a heat resistant alloy such as nickel-iron-chromium or equivalent. Temperature control shall comply with temperature uniformity standard for-class 2 of Aerospace Material Specifications 2750, revision G (AMS 2750G). The instrumentation, measurement and control system shall comply with standards for Instrumentation-Class D of AMS 2750G.

5.2. Performance Characteristics:

The following characteristics constitute the minimum standards for an offer which is considered acceptable. The working depth as well as working diameter define the control volume which is functional for the heat treatment of components, as well as product loading and unloading. The furnace shall maintain a constant and uniform temperature throughout this control volume via the furnace control in accordance with temperature uniformity-class 2 of Aerospace Material Specifications 2750, revision G (AMS 2750G). The instrumentation, measurement and control system shall comply with Instrumentation-class D of AMS 2750G.

Working Depth of Retort .....36"

Working Diameter of Retort .....33"

Minimum Load Rating (not including fixturing).....2,000 lbs.

Minimum Temperature Range.....Ambient to 1400° F

Heat ramp time (empty-ambient to 1400° F).....95 minutes maximum

Temperature uniformity .....± 10°

5.3. Mechanical Characteristics:

5.3.1 Furnace Envelope: The furnace and all ancillary equipment are anticipated to be placed in an area where an existing pit furnace shall be removed from. The furnace described within this specification shall fit within the footprint of the existing pit furnace. Any changes to existing building structure and utilities for the specified furnace to fit within the existing footprint shall be the responsibility of the contractor. The floorplan submitted as required by paragraph 3.1.23.1 will be used to evaluate whether the furnace and its equipment will fit in the anticipated installation site.

5.3.2 Required Features, Options, and or Accessories:

5.3.2.1 Shell: The outer shell of the furnace shall be cylindrical in shape, fabricated from sheet steel of at least 1/4 inch (3 gauge) in thickness and reinforced with steel members and shapes. The shell shall be suitably sealed by continuous welds, bolting, and gasketing around openings to prevent air infiltration. These gaskets shall not contain asbestos.

5.3.2.2 Cover: The furnace shall be provided with an insulated cover. This insulation shall be of ceramic fiber-type or equivalent. The insulation quality and thickness shall be such that the outside surface temperature of the cover shall be equal with the outside surface temperature of the shell. The cover seal shall be of the rope style. The cover shall be provided with a manually actuated hydraulic cylinder for lifting the cover, and shall swing horizontally in either direction from the closed position. The maximum effort required to lift, swing or close the cover shall not exceed a force of 40 pounds.

5.3.2.3 Refractory and Insulation: The refractory shall be of the vacuum formed ceramic fiber-type or equivalent. Neither the refractory nor the insulation shall contain asbestos or mercury compounds. The refractory (or refractory and insulation combined) shall provide sufficient resistance to heat flow so when the empty furnace is held at maximum rated internal temperature for four (4) hours or more, the outer shell temperature shall not exceed 140˚F (60˚C) in accordance with ASTM C1055 Standard Guide for Heated System Surface Conditions that Produce Contact Burn Injuries.

5.3.2.4 Heating Elements: The heating elements shall be designed to meet the heating requirements and temperature uniformity specified in paragraph 5.2. These elements shall be of such quality as to provide 15 years or more life expectancy when operated at full power at a duty cycle of 25%.

5.3.2.5 Recirculating Fan: The furnace work chamber shall be equipped with a separate water cooled internal recirculating fan. It shall be specially designed for this type of application and made of highly heat resistant nickel/chrome alloy construction for heat resistance. This fan shall be adequately sized and powered such that, when operating, it shall cause internal recirculation of heated air at a rate of five furnace volumes per minute or more. This fan shall be located to optimize temperature uniformity throughout the furnace to comply with AMS2750G. Indicator lights shall inform the operator as to whether the fan is running or not running. The furnace shall be provided with an audible alarm and shall automatically shut off power to the heating elements should the recirculating fan stop while the heating elements are operating. Fan shall not reduce the size of the work area of the furnace.

5.3.2.6 Work Supports: Work supports shall be provided and made of heat resistant alloys to withstand maximum rated furnace temperatures and loads.

5.3.2.8 Required Accessories: The furnace shall be provided a loading/unloading basket, constructed of nickel-iron-chromium alloy in order to withstand the maximum specified rated operating temperatures. This basket shall be sized such that it will be the maximum allowable

size that fits into the 33” diameter x 36” deep work chamber and shall include a lifting bar if required.

5.5: <u>Furnace Control System:</u> Each offeror shall provide a complete checklist of the furnace control system’s standard and optional features that are available for the control system being provided. This checklist shall indicate which features shall be provided.

A. Controller-The main computer operator/machine interface, including process controller/recorder.
B. Hardware-thermocouples, wiring, temperature recorders, and the appropriate connections/interfacing to any sensors specific to the furnace operating requirements.
C. Software-The necessary programs and operating information used by the controller.

The required controller is the latest version of the Watlow® F4T Temperature and Process Controller for compliance with AMS 2750G, as well as provide interoperability with existing equipment. The contractor shall provide a complete checklist of the controller’s standard features as configured by the contractor IAW CDRL A029. This checklist shall indicate which features, as well as expansion capabilities, shall be provided. Paragraphs 5.5.1 through 5.5.5 are the minimum hardware/software features, capabilities and control system requirements for the control system being provided.

5.5.4: <u>Minimum Control System Hardware Requirements:</u>

5.5.4.1: <u>Operator Control Panel:</u> The contractor shall provide an operator control panel to house the display screen and all machine controls, including control knobs, indicator lamps, emergency stop buttons, control buttons, and handwheels (if applicable). The operator’s panel and mounting location and orientation shall be located to permit visible access to the work envelope. The operator’s control panel shall include the following:

5.5.4.2: <u>Process Controller:</u> A programmable direct reading system for monitoring and controlling furnace temperature vs. time profile utilizing a tunable Proportional-Integral-Derivative control loop shall be provided. The controller shall be capable of running in either automatic or manual control mode. The process controller shall:

a) Shall be equipped with operator color touch screen display of minimum 4.3” size, as measured diagonally.
b) Be configured with the capability of storing at least 40 temperature profiles (recipes) of up to 50 steps each.
c) Shall be configured with softkeys on the graphical user interface with intuitive and relevant wording for each channel/function/ process variable on the furnace, as a minimum:
    i. Soak Temperature Setpoint
    ii. Process Control Thermocouple
    iii. Process Recording Thermocouple
    iv. Other measured process variables as required

d) Shall have the capability to log temperature history data and to create .csv files on an ad-hoc basis to internal memory and USB flash memory in accordance with AMS 2750G.
e) Shall have an accuracy of +/-0.1% of span plus 1 degree display error.
f) Shall be equipped with at least two (2) USB ports as well as ethernet capability.
g) Shall have the expansion capability to interface with peripherals and other optional accessories using RS485 Modbus® Communications protocols.
h) Shall be equipped with back-up battery capability that in the event of interruption of power, the control shall remain functional for 1 hour, and then execute a shutdown routine in the event that power is not restored within 1 hour.

5.5.4.3: Furnace Excess Temperature Control: The furnace shall be provided with an excess temperature control instrument that shall be wired to shut down the furnace, and sound an external alarm at a preset high temperature. This Overtemperature Controller shall comply with the requirements for AMS 2750 G, temperature class 2, instrumentation type D.

5.5.4.4: Process Data Recorder: The furnace shall be equipped with a process data chart recording capabilities which interfaces the process controller with a standalone PC currently installed at WVA. The PC shall display temperature history graphically of each recipe in "real-time".

5.5.4.5: Calibration: All instruments, controllers and thermocouples shall be calibrated and shall be provided with calibration stickers. This calibration shall be traceable to the national institute of standards and technology (NIST). A written certificate of this traceability shall be sent to the arsenal contracting officer.

5.5.4.6: Control System Temperature Control The control shall be equipped with means to maintain electronic circuitry and devices at temperatures well within safe operating limits (~40˚C or 105 ˚F). The temperature control system shall also provide stability such that temperatures are maintained within +10°F of shop ambient temperature. Ambient temperature in the using shop will range from a low of 65°F to a high of 95°F. It is preferred that temperature control be achieved without the use of refrigeration. In the event that a refrigeration system is absolutely essential, it shall operate normally using a refrigerant having an ozone depletion potential of zero.

5.5.4.7: **Safety Interlocks/Safety Features:** The furnace shall be equipped with safety interlocks/power interruption devices to protect the operator IAW NFPA 86, OSHA, and other applicable standards, including, but not limited to:

i. The heating components shall be interlocked to the cooling system to prevent an unsafe condition to the operator.
ii. A main power disconnect switch with loading lid interlock.
iii. The furnace management system will have digital timer and auto-shutdown.

5.5.4.8: Enclosures: All new controller hardware may be installed in existing electrical enclosures if desired. If new enclosures are provided, they shall be NEMA-12 rated. In addition:

a) If required, given shop environmental conditions as detailed in par. 3.1.32, new control system enclosures for electronic circuitry shall be air conditioned and air filtered to maintain constant temperature, to reduce humidity and to prevent contamination of control boards and other critical system components. Air conditioning units shall not utilize Ozone Depleting substances.

b) New enclosures shall be painted with a color as close to the painted color of the original furnace tools as possible

5.5.5: Control/Operating System Software and Documentation: As applicable: One copy of the touchscreen (if equipped) software, Watlow, and/or other control system software, interface software, and all pertinent documentation are to be provided prior to final acceptance as applicable. If the control provided is equipped with a USB Type-A port then a USB Type-A flash drive loaded with the final version of the system software shall be provided with the final documentation. Also to be provided is a control system bill of materials for the control and temperature measurement systems IAW CDRL A030.

5.5.6: Additional Control Functions and Capacities: The furnace control shall include all of the requirements found in the entire section 5 of this specification. Additional capabilities not otherwise listed or specified in section 5, or any other sections of this document, are permissible provided they do not impede on the necessary functions of the machine as outlined in this specification.

6. Requirements for Demonstration of Conformance:

6.1. Certification, Drawing and Test Required: The contractor shall demonstrate the furnace's conformance to all requirements elsewhere specified in sections 3, 4, and 5 of this specification. The contractor shall also, at a minimum, provide the following certification and perform the following specific tests:

6.1.1. Certification of Completeness: The contractor shall provide written certification that the furnace is complete, including all specified systems, accessories, markings, safety interlocks/devices, geometric and thermal accuracy requirements. The certification shall be provided to the Watervliet Government Representative 14 days prior to the scheduled preliminary testing IAW CDRL A031.

6.1.2. Test of Conformance to Specified Performance Characteristics: The furnace shall sustain a test cycle of duration of at least 240 minutes, using a prescribed temperature profile for a tempering process, including but not limited to, ramp to soak temperature, hold at soak temperature for 2 hours, cool down cycle, for at least two (2) soak temperatures of

a. 425˚F (218˚C) and

b. 1400˚F (760˚C).

The contractor shall provide PDF's of the temperature recording charts as well as .csv files of the temperature history from the process temperature controller for tests a and b above. The certification shall be provided to the Watervliet Government Representative 14 days prior to the scheduled preliminary testing IAW CDRL A032.

The contractor shall supply all materials and labor needed to demonstrate conformance as described herein. A certified factory inspection report shall be provided to the Watervliet Government Representative no later than 14 calendar days prior to the scheduled preliminary testing IAW CDRL A032.

6.1.3. Once the furnace is reassembled (if disassembly is necessary to ship it to WVA) and installed at WVA, the contractor shall perform final acceptance testing on site at WVA, including System Accuracy Tests, (SAT's) and Temperature Uniformity Surveys (TUS's) as described in paragraphs 6.1.8.1 through 6.1.8.3. The contractor shall deliver a final acceptance testing report containing the final results from the SAT's and TUS's IAW CDRL A033.

6.1.5. Test of Conformance to Specified Performance on Workpiece: The machine shall be tested for the performance characteristics specified in section 6.1.2. through 6.1.8 by successfully completing the following performance and accuracy tests without interruption due to furnace or control malfunction. A preliminary dry cycling period not in excess of sixty minutes may precede the testing. In a sequence to be selected by the contractor, the following functions, and workpiece finish characteristics, shall be demonstrated as described in sections 6.1.7 through 6.1.8.

6.1.6. Test Workpieces: At the government's discretion, the government reserves the right to require the vendor perform a tempering operation on a test workpiece prior to shipment in addition to the test of conformance in accordance with paragraph 6.1.2.

6.1.7. Pre-Acceptance System Test: At the government's discretion, the government reserves the right to have one of the government's representatives examine the furnace for compliance with specified performance characteristics at the vendor's manufacturing facility prior to shipment.

6.1.8. Final System Test: As part of the final acceptance test performed at Watervliet Arsenal, the new furnace shall demonstrate conformance through the following procedures included in paragraphs 6.1.8.1 through 6.1.8.4, after the furnace has been installed prior to final acceptance by the government:

6.18.1: System Accuracy Tests: In order to detect and quantify any deviation in furnace instrumentation accuracy, and determine if the deviations are within acceptable limits, the contractor shall demonstrate both the furnace's conformance to AMS 2750G, System Accuracy Testing through the performance of System Accuracy Tests in compliance with temperature Class 2, Instrumentation Type D at the following prescribed temperatures/loading conditions:

a. 200°F
b. 500°F
c. 750°F
d. 1,000°F
e. 1,250°F. (shall be performed both with and without simulated production load)

The contractor shall submit the results of the SAT's to the WVA technical POC in accordance with CDRL 0033.

6.18.2: Temperature Uniformity Surveys: To evaluate the thermal consistency of the load chamber of the furnace, the contractor shall perform Temperature Uniformity Surveys in compliance with temperature Class 2, Instrumentation Type C, in compliance with AMS 2750F, at the following prescribed temperatures:

a. 200°F
b. 500°F
c. 750°F
d. 1,000°F
e. 1,250°F. (shall be performed both with and without simulated production load)

The contractor shall submit the results of the SAT's to the WVA technical POC in accordance with CDRL 0033.

6.1.8.3: Final Tempering of Test Part: During the final acceptance testing, the contractor shall perform a tempering operation at 1250˚F on a steel test part approximately 12 inches in length, and 6 inches in diameter, to be supplied by Watervliet Arsenal. This final tempering test may be performed as part of the Final Acceptance System Accuracy Tests and or the Final Acceptance Temperature Uniformity Surveys.

The government's representative shall examine the test part and deem it as acceptable or non acceptable on a pass/fail basis.

6.1.8.4: Examination for Completeness, Operation, and Functionality:
Upon furnace installation, the government's representative shall examine the furnace for completeness and quality of workmanship, and any deficiencies in manufacturing such as broken or missing bolts/screws, chipped paint, vibration, excessively hot surfaces, noisy fans, etc. prior to final acceptance of the furnace.

6.2. Provision of Materials/Equipment for Preliminary/Final Acceptance Testing:

6.2.1. Workpieces: All materials necessary to produce the workpieces required in section 6 shall be furnished by the contractor unless otherwise stated.

6.2.2. Tooling: All tools (perishable, non-perishable, & special) required to perform the tests specified in section 6 shall be furnished by the contractor and shall become the property of the Arsenal.

6.2.3. Hydraulic Fluids and Lubricants: All fluids and lubricants necessary to perform all required tests shall be furnished by the contractor during preliminary acceptance testing and final acceptance testing. A list of acceptable fluids and lubricants is located in Enclosure A. If the equipment requires a fluid or lubricant not listed in Enclosure A, a justification shall be provided.

6.2.4. Testing and Measuring Equipment: All testing and measuring equipment, including fixtures, required to perform all of the required tests and measure the results shall be furnished by the contractor and shall be calibrated to standards traceable to the National Institute of Standards and Technology (NIST) as well as AMS 2750G.

NOTE: So that both preliminary and final inspections of the machine can be conducted, the Government will only provide the contractor with test components. Any other supplies, materials, measuring equipment or other equipment required for machine acceptance shall be provided by the contractor.

7. Quality Assurance Provisions:

7.1. Responsibility for Inspection: The contractor shall be responsible for performing all certifications and tests required in section 6 and shall provide materials, supplies and equipment as are specified.

7.2. Preliminary Acceptance Inspection: Preliminary acceptance inspection shall occur at the contractor's facility prior to machine shipment to WVA and shall consist of the certifications and tests specified in section 6. When these tests are completed successfully, the contractor shall provide no less than 14 calendar days' notice to the Arsenal Contracting Officer that the machine is ready for the preliminary acceptance inspection. This notification shall also include for review the test results of all preliminary tests performed IAW CDRL A034. If test results are acceptable, the Watervliet Government Representative will schedule an inspection and the contractor shall await the arrival of the Watervliet Government Representative and Arsenal representatives before starting the official inspection.

7.3. Arsenal Participation in Preliminary and Final Acceptance Inspection:

7.3.1. Examination for Completeness: The contractor shall furnish the Watervliet Government Representative with a manufacturer's certification of completeness that certifies all required systems, subsystems and components are complete and in operational condition IAW CDRL A035. The Government will reserve the right to examine the machine to ascertain the presence of all specified features, equipment, markings and safety devices.

7.3.2. Examination of Performance Characteristics: During the test of conformance to specified performance characteristics, the Watervliet Government Representative and Arsenal's representatives will observe the machine and its equipment for proper operation.

7.3.3. Examination of Power and Rigidity: During the test of conformance to specified power and rigidity (see section 6) the Watervliet Government Representative and Arsenal's representatives will observe the machine for rigidity of construction and achievement of full power for the specified time period and reserve the right to examine the workpiece after the test.

7.3.4. Examination of Alignments and Accuracies: During the test of conformance to specified alignments and accuracies the Watervliet Government Representative and Arsenal's representatives will observe the performance of the test and reserve the right to review the results obtained.

7.3.5. Examination of Performance Testing: During the test of conformance to specified performance on workpieces, the Watervliet Government Representative and Arsenal's representatives will observe the operation of the machine and its equipment and reserve the right to inspect the workpiece for conformance to drawing requirements after completion of the test.

7.3.6. Supplementary Tests and Examinations: The Watervliet Government Representative and Arsenal's representatives reserve the right to ask for demonstration of any

specified feature or machine characteristic not demonstrated during the tests conducted in accordance with section 6.

7.4. Re-Inspection Provisions: If, during the course of preliminary acceptance inspection, deficiencies are discovered which cannot be satisfactorily corrected during this visit, preliminary acceptance will be withheld and the contractor shall take corrective actions to correct the deficiencies. In such cases, the Watervliet Government Representative reserves the right to dispatch Arsenal representatives to observe a re-inspection and to charge the contractor's account for the travel and per diem costs of such re-inspections.

NOTE: It is still the responsibility of the contractor to correct any deficiencies that may not have been noted or over looked at the Preliminary Acceptance Inspection.

7.5. Post Preliminary Inspection Procedures: The Watervliet Government Representative will not grant authority to ship the machine following preliminary acceptance inspection, even in cases where there have been no apparent instances of non-conformance. Authority to ship will be granted only by the Watervliet Government Representative. In cases where it is determined that the machine and its equipment conform to specification, the Contracting Officer, through the Watervliet Government Representative, will grant shipping authority within (10) working days of completion of the Preliminary Acceptance Inspection. In cases where deficiencies requiring correction are discovered, the Watervliet Government Representative will furnish a formal listing of required corrective actions within 15 working days of completion of the preliminary acceptance inspection. Also, in such cases, the provisions of section 7.4 shall apply.

7.6. Final Acceptance Inspection: Final inspection and acceptance of the machine shall occur after installation at the Arsenal. At this time the machine shall again be subjected to, and required to pass, the test procedures specified in section 6.

7.7. Warranty: Upon final acceptance of the machine a Standard Commercial Warranty shall commence for two years. This Standard Commercial Warranty shall include, at a minimum, parts and labor for the duration of the warranty at no cost to the Government. The two-year period shall commence from the date of notification by the Watervliet Government Representative of the final acceptance of each machine. Final acceptance is defined as the act of an authorized representative of the Government (the Watervliet Government Representative in this case), by which the Government assumes ownership of existing supplies/equipment and/or approves specific services rendered, as partial or complete performance of the contract (i.e. testing, training, and delivery of all required technical documentation) IAW CDRL A036.

7.8. Preservation and Packaging: The contractor shall utilize standard commercial methods of preservation and packaging appropriate for machine tools and acceptable to commercial carriers. As a minimum, all areas susceptible to damage from exposure to the elements shall be preserved and packed to prevent damage. The machine and equipment shall be blocked, braced and skidded to prevent damage during transport and to facilitate handling, loading and unloading. The contractor shall be responsible for ensuring that the machine and equipment are delivered to Watervliet Arsenal in operational condition and shall retain this responsibility until the machine and equipment are off loaded at Watervliet Arsenal and installed.

NOTE: If any special lifting devices are recommended by the contractor to facilitate handling, such devices shall be shipped with the machine.

Enclosure A - Acceptable Lubricants, Hydraulic Fluids, Oils, and Coolants

Type	Manufacturer
Coolant, Water Soluble Oil	Van Straten #826-C
Coolant, Water Soluble, "No Dye" Concentrate Must Be Clear	Andersol "C"
Cutting Fluid Sulfur and Chlorine Additive 285°F min. Flash Point. 18-22 Centistokes at 100°F Viscosity (Gun Drilling)	MIL-C-46149 Grade 4 *
Cutting Fluid Sulfur and Chlorine Additive 30°F Pour Point, 285°F min. Flash Point 40-44 Centistokes at 100°F Viscosity (Honing)	MIL-C-46149 Grade 5 *
Cutting Fluid Sulfurized Fatty And Mineral Oils. Federal Test Method Std. No. 791	WVTPD 1051 *
Cutting Oil Sulfurized Fatty Mineral	VV-C-850 Type II Grade D
Cutting Oil, Non-Staining, Mineral Oil Base 400°F Flash Point	Mobilmet Omicron
Cutting Oil (Broach Oil)	Product Sol # 336
Cutting Oil (Rifler)	Fuchs Ecocut 336 X
Cutting Oil (Guided Bore)	Benz Patraulic 32
Cutting Oil (Guided Bore)	Monroe Cut NC DP-1 EXP
Grease (Medium Grade)	Almaplex 1275
Grease, Automotive and Artillery	MIL-G-10924-C *
Grease	MOLYKOTE BR-2 PLUS
Hydraulic Fluid, Petroleum Base	MIL-H46001-D *
Lubricant Center Saver	Cimcool
Lubricating Oil, General Purpose, Corrosion & Salt Spray Resistant 39.8-55 Centistokes at 130°F	MIL-L-3150 *
Lubricating Oil, Light Spindle, Velocite #10 (Sunvis #911)	MIL-L-46014 *
Oil, Hydraulic, Light	Socony Mobil DTE-24
Oil, Gear	Mobil #636
Oil, Hydraulic	DTE #26
Oil, Magnetic Particle Insp.	DD-F-87935 (NORPAR 13)
Oil, Hydro Treated Paraffinic Mineral Oil	Pillsbury Circlene FG #21
Oil, Reciprocating	Taco 10/40
Oil, Fatty (Lard Oil)	MIL-F-46148 *
Additive Oil, Extreme Pressure	Lubrizol #5345

* Approved industry/commercial equivalents will be acceptable substitutes

Enclosure B – Class I Ozone Depleting Substances

- CFC 11: Trichlorofluoromethane (CFCL3)
- CFC 12: Dichlorodifluoromethane (CF2CL2)
- CFC 13: Chlorotrifluoromethane (CF3CL)
- CFC 111: Pentachlorofluoroethane (C2FCL5)
- CFC 112: Tetrachlorodifluoroethane (C2F2CL4)
- CFC 113: Trichlorotrifluoroethane (C2F3CL3)
- CFC 114: Dichlorotetrafluoroethane (C2F4CL2)
- CC 115: Monochloropentafluoroethane (C2F3CL)
- CFC 211: Heptachlorofluoropropane (C3FCL7)
- CFC 212: Hexachlorodifluoropropane (C3F2CL6)
- CFC 213: Pentachlorotrifluoropropane (C3F3CL5)
- CFC 214: Tetrachlorotetrafluoropropane (C3F4CL4)
- CFC 215: Trichloropentafluoropropane (C3F5CL3)
- CFC 216: Dichlorohexafluoropropane (C3F6CL2)
- CFC 217: Monochloroheptafluoropropane (C3F7CL)
- Halon 1011: Bromochloromethane (CH2BRCL)
- Halon 1202: Dibromodifluoromethane (CBR2F2)
- Halon 1211: Bromochlorodifluoromethane (CF2CLBR)
- Halon 1301: Bromotrifluoromethane (CF3BR)
- Halon 2402: Dibromotetrafluoroethane (C2F4BR2)
- Carbon Tetrachloride: Tetrachloromethane (CCL4)
- Menthyl Chloroform: 1,1,1-Trichloroethane (C2H3CL3)

Enclosure C – Electrical Survey (CDRL A009)

The Watervliet Arsenal requests that all offerors provide the following machine information along with their proposal (please complete as much as possible):

1. Full Power Load (FLA) @ 480 V
2. Start-up (surge) current
3. Average Power requirement (75%)
4. Standby power load at ideal (if applicable)
5. Power Factor Information (efficiency)
6. Wiring schematics
7. Size of largest motor
8. Number of motors
9. Type of motor
    a. Synchronous
    b. Induction
10. Equipment Manufacturer contact information:
    a. Point of contract for equipment electrical power requirements
        i. Telephone Number
        ii. Email address
11. Manufacture Recommendations for Installation
    a. Electrical Manual
    b. Manufacture's Point of contact
        i. Telephone Number
        ii. Email address

Enclosure D – Environmental Protections Requirements

1. Compliance with Environmental Laws and Regulations: Contractor shall comply with all applicable federal, state, and local environmental laws, statutes, regulations, executive orders, permits, Army regulations (with supplements), as well as Major Subordinate Command (MSC) and installation regulation, policy, Host Tenant Agreement, Interagency Service Support Agreement, or Status-of-Forces Agreement. Contractor shall immediately report any conflicts between applicable federal, state, local environmental laws, statutes, executive orders, and provisions of Army Regulation 200-1, and any specifications within this contract to the Watervliet Government Representative.

2. Compliance with Green Procurement Requirements: Contractor shall follow Federal EPA Comprehensive Procurement guidelines (www.epa.gov/cpg) and Army Contracting Command Quick Guide (https://acc.aep.army.mil/accapps/ACCMAP/Documents/Quick-Guide-for-Sustainable-Procurement.docx) for acquisition of building materials and products and select materials that have a long life cycle; the least toxic materials; recyclable materials; materials that are resource-efficient; materials with the maximum recycled content; materials harvested on a sustained yield basis; and products causing the least pollution during their manufacture, use, and reuse.

3. Compliance with License and Certification Requirements: Contractor shall obtain all license and certification required by Federal, State, and Local environmental laws and regulations necessary to adhere to the requirements of this contract. The contractor shall submit all plans, notifications, reports, submittal documents, and fees required by Federal, State, and Local environmental laws and regulations to the appropriate Federal, State, and Local authority and/or agency as necessary to adhere to the specification of this contract. All required licenses and certifications required by Federal, State, and Local environmental laws and/or regulations shall be considered a contract deliverable IAW CDRL A037.

4. Notification of Federal and State Regulators: Contractor shall immediately notify the Watervliet Government Representative of the arrival on site of any Federal, State, and/or DoD environmental regulator or enforcement agent and/or the receipt of any correspondence from a Federal or State environmental agency.

5. Inspections of Work Sites: Contractor shall submit to potential Federal, State, Army and installation work site environmental regulatory inspections and/or investigations into noncompliance, and fully cooperate with such inspections/investigations by providing the appropriate records and documentation. Environmental regulatory agencies are authorized by law to inspect any work site for environmental compliance with regulatory requirements. If an inspection is conducted, it will not stop or disrupt ongoing contract activities. The inspection will only require the work site environmental officer, or supervisor/manager to answer questions and/or escort the inspector to specific work site areas with the potential to affect environmental quality.

6. Reporting Noncompliance: Contractor shall immediately report any nonconformance and/or noncompliance with applicable Federal, State or Local environmental laws, Army and installation environmental regulations or policies to the Watervliet Government Representative.

7. Verification of National Environmental Policy Act Documents: Contractor shall obtain, from the Watervliet Government Representative, a copy of AMC's National Environmental Policy Act Policy and 32 CFR 651 which addresses actions to be taken by the contractor. These documents include but are not limited to the analysis-associated decision document of an Environmental Impact Statement and Record of Decision; Environmental Assessment and Finding of No Significant Impact or Notice to Proceed; or Record of Environmental Consideration on the proposed contract actions prior to commencement of such actions.

8. Conformance with Environmental Management System: Contractor shall take the necessary actions to identify, monitor, and control those contract operations and activities that pose risk of contamination, or can negatively impact the natural and/or human environment.

9. Assignment of Environmental Compliance Designee (ECD): Contractor shall appoint an ECD for all contract work periods exceeding 180 consecutive days. Contractor shall appoint a primary and alternate ECD for each production, shop or work area that uses and/or stores hazardous materials and/or generates hazardous wastes. Contractor ECDs shall monitor implementation of all environmental regulatory requirements, report all environmental noncompliance to the work site supervisor, correct all environmental noncompliance, and verify implementation of directed actions to correct identified environmental noncompliance. Contractor shall have at least one ECD on duty at all times at each shop or work area. Contractor shall require all personnel designated as ECDs to complete the initial ECD training through the installation or Major Subordinate Command (MSC) environmental compliance point of contact within 15 days of the start of contract performance. Contractor personnel appointed as ECDs may perform other duties provided they do not prevent the performance of ECD duties. The contractor may request a waiver of this requirement through the Watervliet Government Representative, if using and/or storing very small quantities of hazardous materials.

10. Competency Training for Contractor Personnel: Contractor shall not allow personnel to perform any activities and/or tasks on AMC installations without proper and adequate qualifications or job competency training. In the event of any identified noncompliance, the contractor shall, if requested, provide proof of contract personnel training or qualification (individual name, training/qualification type, training/qualification certificate, and date of training/qualification) to perform those contract activities associated with the identified noncompliance.

11. Generation of Solid Waste: Contractor shall remove from the installation and dispose of all solid waste generated, which cannot be recycled to an approved and permitted off-post disposal facility.

11.1. Contractor shall make every effort to divert construction, demolition debris, and all other solid waste to comply with the Army Integrated Solid Waste Management Policy.

11.2. The Contractor shall establish a program to promote cost-effective waste reduction in all operations and facilities covered by the contract. This includes collection, separation, and processing products or other materials recovered from solid waste streams for use in the form of raw materials.

11.3. The Contractor shall make maximum effort to reduce and prevent waste.

12. Segregation of Hazardous Waste:

A. All hazardous waste generated on this contract must be segregated and kept physically separate from any other waste items and materials. All wastes must be properly containerized and labeled. Waste containers are to be supplied by the contractor and must be designed for the waste type being disposed of according to all Federal, State and Local laws. In the event the waste classification is unknown prior to containerization, the container must be marked "under analysis, treat as hazardous waste". All waste must be properly sampled and characterized at the contractor's expense, with copies of all analytical results submitted to the WVA Environmental Department within 24 hours of receipt IAW CDRL A038. Any waste characterized as Hazardous Waste must be properly labeled and will stored at the WVA RCRA Storage Area.

B. All waste items must be so marked so that they are readily identified to this contract throughout the process. In addition, the contractor must ensure that there is a clear audit trail for all items until final treatment/disposal is accomplished.

C. The contractor is responsible for proper disposal of all excess samples, they shall be added to the corresponding waste container.

12.1. Treatment of Hazardous Waste on Government Facility:

A. Treatment of hazardous waste (including solidification) on Government facilities is not permitted. Treatment is defined as any process which meets the definition of treatment as set forth in applicable local, state, and Federal (including 40 CFR 260.10) laws and regulations.

B. The contractor shall not drain and/or flush PCB items at Government installations. Draining will be allowed only to prevent leaking and to meet DOT regulations.

C. Treatment, disposal, or release of gas (other than inert) to the atmosphere on Government premises is not permitted by this contract. The contractor may perform gas extraction for other than inert gas cylinders at the pickup location using self-contained apparatus. This apparatus shall emit no gas into the atmosphere, and purge the entire cylinder contents into a closed receiver for transport to a recycling or disposal site.

12.2. Waste Disposal Requirements and Documentation:

A. The contractor is responsible for the proper disposal of any Hazardous Waste generated during the project, in accordance with all applicable Federal, State, and Army regulations. Disposal shall only be through licensed/permitted Treatment Storage and Disposal Facilities (TSDF), utilizing properly permitted waste transporters. All Hazardous Waste Manifests MUST include waste profiles be signed only by a representative of the WVA Environmental Office IAW CDRL A039. The contractor shall NOT sign hazardous waste manifests on

behalf of the generator of the waste. Non-RCRA regulated (Non-Hazardous) waste shall be properly disposed of by the contractor, at the contractor's expense. The contractor shall, without additional expense to the Government, be responsible for paying all fees, preparing or obtaining any necessary licenses, permits, notifications, waste profiles, or reports, which result from a contractor's transportation, recycling, or disposal decision of such wastes.

B. The contractor shall pay any and all fees, surcharges, fines or civil penalties resulting from errant or illegal waste profiling, packaging, labeling, documentation, transport or disposal of any waste from the project. The contractor shall contact the Environmental Department immediately upon learning of any errant or illegal waste profiling, packaging, labeling, documentation, transport or disposal.

C. All references to manifests in this provision relate to the "appropriate shipping paper" as required. The contractor shall obtain and prepare all manifests, required for acceptance of waste into a Qualified Facility, and any other shipping documents. The contractor shall provide the Watervliet Government Representative with a copy of the completed form(s), for review at least five (5) business days prior to removal. Prior to removal from the site, completed copies of all manifests shall be furnished to the Environmental Office. Disposal receipts, weight slips and/or recycling receipts shall be submitted to the Environmental Office within 24 hours of receipt by contractor IAW CDRL A040. Each manifest, as well as all other documentation required herein, shall be clearly and distinctly marked with the generator of the waste and the contract and task order number, as applicable. Emergency response information and twenty-four hour emergency phone numbers shall be listed on the Hazardous Waste Manifest as well. If blocks are not provided, this information shall be placed in the upper, right-hand corner of each document.

D. The contractor shall notify the Environmental Department at least five (5) business days BEFORE attempting analysis or pickups of any waste for disposal.

E. The Government reserves the right to take appropriate action, such as the pursuit of monetary consideration and/or annotation of negative past performance if the contractor fails to meet the above applicable notification of waste removal from the pick-up location.

F. Contractor may not ship waste outside of the United States to circumvent Environmental Protection Agency (EPA) land disposal restrictions.

13. <u>Use of Hazardous Materials:</u> Contractor shall assign all hazardous materials management responsibilities to the appointed ECD. Contractor shall contact the Watervliet Government Representative to obtain technical assistance from Environmental Office for assisting the ECD with achieving and maintaining compliance (IAW CDRL A004) with hazardous material storage, issue, use, and disposal requirements. Contractor shall submit to the Watervliet Government Representative a hazardous material inventory IAW CDRL A041. The hazardous material inventory shall be submitted 30 days prior to commencement of work for contracts that exceed 180 consecutive days. The inventory list shall contain the hazardous material type and maximum quantities of materials anticipated to be stored on-site. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. The contractor shall maintain copies of Safety Data Sheets IAW CDRL A004 for all hazardous materials used and stored on-site during performance of the contract. Contractor shall not supply or deliver any hazardous materials or chemicals to an installation that are listed on EPA toxic chemical list without prior written approval from the Watervliet Government Representative.

14. <u>Prevention of Storm Water Pollution:</u> The contractor shall perform, track, participate, implement, and comply with storm water pollution prevention minimum control measures, protocols, and best management practices (BMP) and ensure that water quality standards are not violated in accordance with all regulations and policies as applicable to the Pollutant Discharge Elimination System general permit requirements. Applicable permits include:

1) The Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activities (MSGP); and,
2) All Construction Activity Storm Water permits minimum control measures include, but not limited to:

- Public Education and Outreach on Storm Water Impacts
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Run-off Control
- Post Construction Storm Water Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations Contractors will comply with the MSGP permit when the activity is identified as a permitted industrial activity. BMPs include, but are not limited to:
- Practicing spill prevention and good housekeeping.
- Installing and managing erosion and sediment control.
- The contractor shall obtain permit coverage for construction activities disturbing over one acre of land (total acreage is cumulative across all portions of the project). BMPs include, but are not limited to:
- Preparing and implementing a site-specific Storm Water Pollution Prevention Plan (SWPPP) as outlined in the permit and prior to any soil disturbance.
- Installing and managing erosion and sediment control.
- Make available, upon request, permit associated documentation.
- Practicing spill prevention and good housekeeping.
- Schedule inspections and provide corrective actions for noted deficiencies.

15. <u>Storm Water Management Low Impact Design/Development (LID):</u> The contractor shall perform, track, participate, implement, and comply with Section 438 of the Energy Independence and Security Act; Executive Order 13514; and the DOA memorandum (2010) for full implementation of low impact design/development (LID) techniques to restore predevelopment hydrology to the maximum extent technically feasible for both new and renovation construction projects regardless of size. In support of LID, the contractor shall adhere to installation landscape codes and the guidance found in the Installation Design Guide concerning Low Impact

Design/Development for storm water management. The following LID practices include, but are not limited to:

- Restoring predevelopment hydrology to the maximum extent technically feasible
- Promoting natural removal of pollutants such as nutrients, oil and grease, and sediments from storm water
- Managing rainfall at the point where it falls
- Meeting the requirements of the MS4 permit
- Important Note: Utilization of permanent retention/detention ponds is prohibited without authorization from the Installation Planning Division.

16. Use of Pesticides: N/A

17. Protection of Work Site Resources: Contractor shall confine all activities to areas defined by the drawings and specifications, only accessing areas required for construction and installation of the machine. This would typically include only activities required to access the machine footprint with personnel and rigging equipment such as lifts, cranes, and forklifts for the purposes of installing the machine, as well as access to areas for installing/modifying any required utilities (e.g. electrical wiring or underground piping). Prior to the beginning of any work, the contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and landforms. The contractor shall provide effective protection for land and vegetative resources at all times. Prior to site clearing and grubbing, the contractor shall coordinate harvesting of saleable timber with the Watervliet Government Representative. Contractor shall notify the Watervliet Government Representative if any trees are required to be disposed or removed. The contractor is not authorized to remove or dispose of any tree greater than 6 inches in diameter unless permission has been granted in writing by the Watervliet Government Representative.

18. Prevention of Spills: Contractor shall adopt the installation's Spill Prevention Control and Countermeasures Plan (SPCC) if transporting, processing, storing, or in any way managing hazardous waste, hazardous material, petroleum-oils-lubricants, or other restricted items. In case of a spill, the person in control of the spill site or their designated representative shall take appropriate action to protect workers and bystanders; contain the spill (if it can be done safely); secure the spill site; restrict ignition sources; and immediately contact the installation Fire and Emergency Services (Fire Department).

19. Protection of Sensitive Areas: Contractor shall comply with all installation designated sensitive and/or off-limit area restrictions. Sensitive areas are generally demarked indicating

what activities (e.g., driving, digging, foot traffic) are prohibited. The contractor shall also adhere to the following installation sensitive areas requirements:

19.1. Cultural Resources Sites: The contractor shall not excavate, remove, damage, or otherwise deface any archeological resource located on public lands.

20. Corrective Action for Noncompliance: Contractor shall, when given a verbal and/or written notice of environmental noncompliance or nonconformance by the Watervliet Government Representative, take immediate corrective action. Failure or refusal to comply promptly may be grounds for the Contracting Officer to invoke the appropriate contractual remedies. This may cause all or part of the work to be stopped immediately until satisfactory corrective action has been taken.

21. Noise: The contractor shall make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives will not be permitted without written permission from the Contracting Officer, and then only during the designated times. Pile-driving operations shall be coordinated through the Watervliet Government Representative.

22. Mercury: Mercury is prohibited, unless specified otherwise, and with the exception of mercury vapor lamps and fluorescent lamps. Dumping of mercury-containing materials and devices such as mercury vapor lamps, fluorescent lamps, and mercury switches, in rubbish containers is prohibited. The contractor shall remove without breaking, pack to prevent breakage, and transport out of the activity in an unbroken condition for disposal as directed. Immediately report to the Watervliet Government Representative instances of breakage or mercury spillage. The contractor shall clean mercury spill area to the satisfaction of the Contracting Officer. Materials used in the cleanup of a mercury spill shall not be recycled and shall be managed as a hazardous waste for disposal.

23. Universal Waste / e-Waste Management: Universal waste and e-wastes including but not limited to some mercury containing building products such florescent lamps, mercury vapor lamps, high pressure sodium lamps, CRTs, batteries, aerosol paint containers, electrical equipment containing PCBs, and consumed electronic devices, shall be managed in accordance with applicable environmental law and installation instructions.

24. Pollution Prevention / Hazardous Waste Minimization: Minimize the use of hazardous materials and the generation of hazardous waste. The contractor shall consult with WVA's Environmental Office for suggestions and to obtain a copy of the installation's pollution prevention/hazardous waste minimization plan for supporting waste minimization goals

Enclosure E-Glossary of Acronyms

INDUSTRY AND INDUSTRY ASSOCIATION ACRONYMS:

1. ANSI- American National Standards Institute
2. ASME-American Society of Mechanical Engineers
3. CAGI-Compressed Air and Gas Institute

4. EIA-Electronics Industries Association
5. FANUC-Fuji Automatic Numerical Control
6. IEEE-Institute of Electrical and Electronics Engineers
7. ISO- International Standards Organization
8. JIC-Joint Industry Code
9. MSS-Manufacturer's Standardization Society
10. NEMA-National Electrical Manufacturer's Association
11. NFPA-National Fire Protection Association
12. NMTBA-National Machine Tool Builders Association
13. OSHA-Occupational Safety and Health Administration

UNIT SYSTEM ACRONYMS:

1. RMS-Root Mean Square
2. JIC-Joint Industry Code
3. AC –Alternating Current
4. RMS-Root Mean Square
5. DC-Direct Current
6. l/m-liters per minute
7. GPM-gallons per minute

Enclosure F- Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE STANDARDS

MIL-H-6875H .....Military Specification Heat Treatment of Steel

1.1. Non-Government Publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B11.24 2002 (R12…..Safety Requirements for Transfer Furnaces

ANSI B11.TR1-2004……...Ergonomic Guidelines for the Design, Installation Use of Furnace Tools

ANSI B11.TR2-1997……Mist Control Considerations for the Design, Installation, and Use of Furnace Tools Using Metalworking Fluids

ANSI B11.TR3-2000……Risk Assessment and Risk Reduction - A Guideline to Estimate, Evaluate, and Reduce Risks Associated with Furnace Tools

ANSI B11.TR4-2004……Selection of Programmable Electronic Systems (PES/PLC) for Furnace Tools

ANSI B11.TR5-2006……Sound Level Measurement Guidelines

ANSI B11.TR6-2010……Safety Control Systems for Furnaces

ANSI B11.TR7-2007……Designing for Safety and Lean Manufacturing - A guide on integrating safety and lean manufacturing principles in the use of machinery

ANSI B11.23 2002 (R12)…....Safety Requirements for Machining Centers and Automatic Numerically Controlled Milling, Drilling and Boring Furnaces

ANSI B11.22-2002 (R12)…….Safety Requirements for Turning Centers and Automatic Numerically Controlled Turning Furnaces

ANSI B11.21-2006 (R12)……..Safety Requirements for Furnace Tools Using Lasers for Processing Materials

ANSI B11.20 2004 (R15)……..Safety Requirements for Integrated Manufacturing Systems

ANSI B11.19-2010……Performance Requirements for Safeguarding

ANSI B11.18-2006 (R12)……..Safety Requirements for Furnaces Processing or Slitting or Non-Coiled Metal

ANSI B11.17 2004……(R15) Safety Requirements for Horizontal Hydraulic Extrusion Presses

ANSI B11.16 2003 (R09)……..Safety Requirements for Powder/Metal Compacting Presses

ANSI B11.15 2001 (R12)……..Safety Requirements for Pipe, Tube and Shape Bending Furnaces

ANSI B11.13 1992 (R07)……..Safety Requirements for Single and Multiple-Spindle Automatic Bar, and Chucking Furnaces

ANSI B11.12 2005 (R2015)…..Safety Requirements for Roll Forming & Roll Bending Furnaces

ANSI B11.11 2001 (R12)……..Safety Requirements for Gear and Spline Cutting Furnaces

ANSI B11.10 2003 (R15)……..Safety Requirements for Metal Sawing Furnaces

ANSI B11.09-2010 (R2015)…..Safety Requirements for Grinding Furnaces

ANSI B11.08 2001 (R12)……..Safety Requirements for Manual Milling, Drilling, & Boring Furnaces with or without Automatic Control

ANSI B11.07 1995 (R2010)…..Cold Headers Safety Requirements for Construction, Care, and Use

ANSI B11.06 2001 (R12)……..Safety Requirements for Manual Turning Furnaces with or without Automatic Control

ANSI B11.05 1988 (R08)……..Ironworkers - Safety Requirements for Construction, Care, and Use

ANSI B11.04 2003 (R13)……..Safety Requirements for Shears

ANSI B11.03 2012……Safety Requirements for Power Press Brakes

ANSI B11.02 – 2013…….Hydraulic and Pneumatic Power Presses - Safety Requirements for Construction, Care, and Use

ANSI B11.01-2009……Safety Requirements for Mechanical Power Presses

ANSI B11.0-2015……..Safety of Machinery; General Requirements and Risk Assessment

ANSI / ISO 12100 – 2012……Safety of Machinery - Basic Concepts, General Principles for Design - Risk Assessment and Risk Reduction

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C1055……Standard Guide for Heated System Surface Conditions that Produce Contact Burn Injuries.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 79……..Electrical Standard for Industrial Machinery

NFPA 86……..Standard for Ovens and Furnaces

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 230-2:2006……...NC Positioning Standard Revised

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

B5 Furnace Tools……Components, Elements, Performance, and Equipment

SAE AEROSPACE STANDARD

AMS2750E……..Pyrometry

AMS2750F……..Furnaces

DD FORM 1423-E, APR 00 PAGE 1 OF 1
CONTRACT DATA REQUIREMENTS LIST Form Approval OMB No. 0704-0188
Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.: 0002 D. SYSTEM/ITEM....: Pit Tempering Furnace
B. EXHIBIT.....: A E. CONTRACT/PR NO.: TBD
C. CATEGORY.....: F. CONTRACTOR.....: TBD

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1. DATA ITEM NO.....: A001
2. TITLE OF DATA ITEM: Equipment Technical Manual (Sanitized)
3. SUBTITLE.....: Instructions for the Maintenance and Adjustment of Equipment Components.
4. AUTHORITY.....: DI-TMSS-81675
5. CONTRACT REFERENCE: 3.5; 3.9.9
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: Upon Final Acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.:

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		1

15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.5, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A002
2. TITLE OF DATA ITEM: Plates and Tags for Identification of Equipment, General Specification For
3. SUBTITLE.....: Motor I.D. Plate
4. AUTHORITY.....: MIL-DTL-15024G
5. CONTRACT REFERENCE: 3.8.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....:
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.:

---

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

---

16. REMARKS:

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A003

2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Asbestos and Mercury Free Certification
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.9.5
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award Date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace

13. DATE OF SUBS. SUB.:

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 3.9.5, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A004
2. TITLE OF DATA ITEM: Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities
3. SUBTITLE.....: Material Safety Data Sheets
4. AUTHORITY.....: FED-STD-313F
5. CONTRACT REFERENCE: 3.9.6; Attachment D paragraph 13
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: As of Solicitation Release
12. DATE OF FIRST SUB.: Proposal Submission
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		1

15. TOTAL: 1

16. REMARKS:

Copies of the Material Safety Data Sheets shall be submitted with the solicitation proposal.
Inclusive of the items in section 3.9.6, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A005
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Lead Free and Chromium Free Paint Certification
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.9.7
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: Upon Final Acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION A. ADDRESSEES B. COPIES
alexander.m.gardner2.civ@army.mil DRAFT FINAL
1
15. TOTAL: 1
---
16. REMARKS:
Inclusive of the items in section 3.9.7, contractor format is authorized.

G. PREPARED BY: I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A006
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: PCB Free Certification
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.9.8
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: Upon Final Acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.:
---
14. DISTRIBUTION A. ADDRESSEES B. COPIES
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1
15. TOTAL: 1
---
16. REMARKS:
Inclusive of the items in section 3.9.8, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A007
2. TITLE OF DATA ITEM: Equipment Technical Manual (Sanitized)
3. SUBTITLE.....: Lockout/Tagout Procedures
4. AUTHORITY.....: DI-TMSS-81675
5. CONTRACT REFERENCE: 3.9.9; 3.12
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: Upon Final Acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.:
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14. DISTRIBUTION A. ADDRESSEES B. COPIES
alexander.m.gardner2.civ@army.mil DRAFT FINAL
1
15. TOTAL: 1
---
16. REMARKS:
Inclusive of the items in section 3.9.9, C.3.12 contractor format is authorized.
Information shall be incorporated into the maintenance manual.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A008
2. TITLE OF DATA ITEM: Plates and Tags for Identification of Equipment, General Specification For
3. SUBTITLE.....: Operator’s Workstation Data Plate

4. AUTHORITY.....: MIL-DTL-15024G
5. CONTRACT REFERENCE: 3.11
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....:
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.:

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

16. REMARKS:

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A009
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Enclosure C – Electrical Survey
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.13.1; Enclosure C – Electrical Survey
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Date of Proposal Submission
12. DATE OF FIRST SUB.: With Proposal Submission
13. DATE OF SUBS. SUB.: ASREQ

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15. TOTAL: 1

16. REMARKS:

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A010
2. TITLE OF DATA ITEM: Plates and Tags for Identification of Equipment, General Specification For
3. SUBTITLE.....: Lubrication Plate
4. AUTHORITY.....: MIL-DTL-15024G
5. CONTRACT REFERENCE: 3.14.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

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			1

15. TOTAL: 1

16. REMARKS:
Lubrication plate shall be provided with machine at time of machine delivery.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: J. DATE:

---

1. DATA ITEM NO.....: A011
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: List of Lubricants, Hydraulic Fluids, Oils and Coolants
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.14.2
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: 30 calendar days prior to delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.14.2, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A012
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: List of Standard Paint Colors Supplied by Contractor
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.16
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....:
12. DATE OF FIRST SUB.: No later than 30 days after contract award.
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.16, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A013
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Foundation Drawings, Standard or Special
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.1; 4.1.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date

12. DATE OF FIRST SUB.: 30 calendar days prior to delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION A. ADDRESSEES B. COPIES

	DRAFT	FINAL
alexander.m.gardner2.civ@army.mil		1

15. TOTAL: 1

---

16. REMARKS:
Foundation Drawings shall be delivered 30 calendar days prior to delivery of machine. One hardcopy and one AutoCAD electronic copy shall be delivered.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A014
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Machine and Equipment Floor Plan
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.2
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Upon Proposal Submission
12. DATE OF FIRST SUB.: Upon Proposal Submission
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION A. ADDRESSEES B. COPIES

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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.20.2, contractor format is authorized. One copy shall be a hardcopy and the other shall be an AutoCAD electronic copy.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A015
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Catalog of Standard Tooling and Accessories
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.3
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: 30 calendar days after contract award with
13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION A. ADDRESSEES B. COPIES

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alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

---

16. REMARKS:
Inclusive of the items in section 3.20.3, contractor format is authorized. Two hardcopies and one in electronic (PDF) format.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A016
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Drawings and Specifications for Non-Standard (Special Tooling and Accessories
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.4
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

16. REMARKS:
Inclusive of the items in section 3.20.4, contractor format is authorized. One copy shall be a hardcopy and the other shall be an AutoCAD electronic copy.

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A017
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Installation Instructions and Drawings
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.5
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: 60 calendar days prior to delivery of the furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

16. REMARKS:
Inclusive of the items in section 3.20.5, contractor format is authorized. One copy shall be a hardcopy and the other shall be an AutoCAD electronic copy.

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A018
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Lubrication Diagram and Instructions
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.6
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace

13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
	alexander.m.gardner2.civ@army.mil	DRAFT	FINAL
			2

15. TOTAL: 2

---

16. REMARKS:
Inclusive of the items in section 3.20.6, contractor format is authorized. One copy shall be in hardcopy format and the other shall be an electronic copy in PDF format.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A019
2. TITLE OF DATA ITEM: Equipment Technical Manual (Sanitized)
3. SUBTITLE.....: Operating Instructions
4. AUTHORITY.....: DI-TMSS-81675
5. CONTRACT REFERENCE: 3.20.7
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of furnace
13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			4

15. TOTAL: 4

---

16. REMARKS:
Inclusive of the items in section 3.20.7, contractor format is authorized. The four copies shall be in hardcopy format.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A020
2. TITLE OF DATA ITEM: Equipment Technical Manual (Sanitized)
3. SUBTITLE.....: Maintenance and Troubleshooting Instructions
4. AUTHORITY.....: DI-TMSS-81675
5. CONTRACT REFERENCE: 3.20.8
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
	alexander.m.gardner2.civ@army.mil	DRAFT	FINAL
			4

15. TOTAL: 4

---

16. REMARKS:
Inclusive of the items in section 3.20.8, contractor format is authorized. Two copies shall be in hardcopy format and the other two shall be electronic copies (CDs).

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A021
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Electronic and Hydraulic Schematics
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.20.9
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No later than 90 calendar days after contract award.
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

16. REMARKS:
Inclusive of the items in section 3.20.9, contractor format is authorized. One copy shall be in hardcopy format and the other shall be an electronic copy (CD).

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A022
2. TITLE OF DATA ITEM: Spares Cataloging Data Sheets
3. SUBTITLE.....: Repair Parts Catalog
4. AUTHORITY.....: DI-ILSS-80968
5. CONTRACT REFERENCE: 3.20.10
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		3

15. TOTAL: 2

16. REMARKS:
Inclusive of the items in section 3.20.10, contractor format is authorized. The contractor shall deliver two hardcopies and one electronic copy (PDF) of the Repair Parts Catalog.

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A023
2. TITLE OF DATA ITEM: Equipment Technical Manual (Sanitized)
3. SUBTITLE.....: Program Manuals
4. AUTHORITY.....: DI-TMSS-81675
5. CONTRACT REFERENCE: 3.20.11
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION | A. ADDRESSEES | B. COPIES

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15. TOTAL: 2

---

16. REMARKS:
Inclusive of the items in section 3.20.11, contractor format is authorized. One copy shall be a hardcopy and one copy shall be an electronic copy (PDF).

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A024
2. TITLE OF DATA ITEM: Computer Software Product End Items
3. SUBTITLE.....: Software Documentation
4. AUTHORITY.....: DI-AVCS-80700A
5. CONTRACT REFERENCE: 3.20.12
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No later than 30 calendar days after delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION | A. ADDRESSEES | B. COPIES

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	alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

---

16. REMARKS:
Inclusive of the items in section 3.20.12, contractor format is authorized. One copy shall be a hardcopy and one copy shall be an electronic copy (CD). One copy of the system memory backup (S-Ram) shall be provided on compact flash drive at startup of machine.

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A025
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Training
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.21
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: Proposal submission
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION | A. ADDRESSEES | B. COPIES

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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.21, contractor format is authorized. Training schedule shall show the hours of training for each person under their assigned category.

G. PREPARED BY: Mr. Alexander M. Gardner
H. DATE: 13 December 2022
I. APPROVED BY:
J. DATE:

---

1. DATA ITEM NO.....: A026
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Repair/Replacement Parts and Service Data
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 3.22
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: ASREQ
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in section 3.22, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

---

1. DATA ITEM NO.....: A027
2. TITLE OF DATA ITEM: Spares Cataloging Data Sheets
3. SUBTITLE.....: List of Recommended Spare Machine Parts
4. AUTHORITY.....: DI-ILSS-80968
5. CONTRACT REFERENCE: 3.22
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: With delivery of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		3

15. TOTAL: 2

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16. REMARKS:
Inclusive of the items in section 3.22, contractor format is authorized. The contractor shall deliver two hardcopies and one electronic copy of the List of Recommended Spare Parts.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A028
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Contractor Personnel Rigging Qualifications
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 4.2.3
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: ASREQ
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION A. ADDRESSEES B. COPIES

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alexander.m.gardner2.civ@army.mil	N/A	N/A

15. TOTAL: N/A

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16. REMARKS:
Any contractor personnel operating forklifts on Government facilities shall provide valid forklift licenses.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A029
2. TITLE OF DATA ITEM: Computer Software Product End Items
3. SUBTITLE.....: Checklist of the control system’s standard features
4. AUTHORITY.....: DI-AVCS-80700A
5. CONTRACT REFERENCE: 5.5
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No later than 30 calendar days after furnace delivery
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION A. ADDRESSEES B. COPIES

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alexander.m.gardner2.civ@army.mil		2

15. TOTAL: 2

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16. REMARKS:
Inclusive of the items in section 5.5, contractor format is authorized. One copy shall be a hardcopy and one copy shall be an electronic copy (CD). One copy of the system memory backup (S-Ram) shall be provided on compact flash drive at startup of machine.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A030
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Control/Operating System Software and Documentation
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 5.5.5
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ASREQ
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: At final acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

---

14. DISTRIBUTION A. ADDRESSEES B. COPIES

	DRAFT	FINAL
alexander.m.gardner2.civ@army.mil	N/A	N/A

15. TOTAL: N/A

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16. REMARKS: Inclusive of the items in section 5.5.5, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A031
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Certification of Completeness

4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 6.1.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: 14 calendar days prior to scheduled preliminary testing.
13. DATE OF SUBS. SUB.:

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 6.1.1, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A032
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Certified Factory Inspection Report
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 6.1.3
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: 14 calendar days prior to the scheduled preliminary testing.
13. DATE OF SUBS. SUB.:

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 6.1.3, contractor shall provide a PDF copy of the Certified Factory inspection report no later than 14 calendar days prior to scheduled preliminary testing.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A033
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Final Acceptance Testing Report
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 6.1.3.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No later than 30 days after final acceptance of Pit Tempering Furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 6.1.3.1, Final Acceptance Testing Report including all SAT's, TUS's shall be provided in PDF format. Report shall be provided to the COR no later than 14 calendar days prior to the scheduled preliminary testing.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A034
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Notification of Readiness for Preliminary Acceptance Inspection
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 7.2
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: Up to 14 Days after OEM performs preliminary testing of furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		1

15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 7.2, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A035
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Manufacturer's Certification of Completeness
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: 7.3.1
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No more than 30 days after Final Furnace Acceptance
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		1

15. TOTAL: 1

16. REMARKS:
Inclusive of the items in section 7.3.1, contractor format shall provide Manufacturer's Certification of Completeness in PDF form, no later than 30 days after final acceptance of furnace.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A036
2. TITLE OF DATA ITEM: Warranty Performance Report
3. SUBTITLE.....: Warranty
4. AUTHORITY.....: DI-SESS-81639B

5. CONTRACT REFERENCE: 7.7
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: One Time
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: Upon final acceptance of the furnace
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:
Warranty shall commence for two years upon final acceptance of the machine. Contractor shall provide a hardcopy and electronic copy in PDF form upon final acceptance of the furnace.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A037
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Federal, State, and Local Environmental Law and Regulation Licenses and Certifications
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: Paragraph 3 of Attachment D
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Date of Contract Award
12. DATE OF FIRST SUB.: Date of Contract Award
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A038
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Analytical Results of Wastewater Samples
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: Paragraph 12A of Attachment D
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: No later than 24 hours after results are available
13. DATE OF SUBS. SUB.: ASREQ

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

16. REMARKS:

Inclusive of the items in paragraph 12A of Attachment D, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A039
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Hazardous Waste Manifests
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: Paragraph 12.2A of Attachment D
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract award date
12. DATE OF FIRST SUB.: ASREQ
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in paragraph 12A of Attachment D, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A040
2. TITLE OF DATA ITEM: Certification Data Report
3. SUBTITLE.....: Disposal Receipts, Weight Slips, Recycling Receipts
4. AUTHORITY.....: DI-MISC-82386
5. CONTRACT REFERENCE: Paragraph 12.2C of Attachment D
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R
11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: No later than 24 hours after receipt by contractor
13. DATE OF SUBS. SUB.: AS REQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
		DRAFT	FINAL
	alexander.m.gardner2.civ@army.mil		

15. TOTAL: 1

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16. REMARKS:

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:

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1. DATA ITEM NO.....: A041
2. TITLE OF DATA ITEM:
3. SUBTITLE.....: Hazardous Material Inventory
4. AUTHORITY.....:
5. CONTRACT REFERENCE: Paragraph 13 of Attachment D
6. REQUIRING OFFICE..: ODP-I
7. DD250 REQ.....: DD
8. APP CODE.....: N/A
9. DIST. STMT. REQD..: A
10. FREQUENCY.....: ONE/R

11. AS OF DATE.....: Contract Award Date
12. DATE OF FIRST SUB.: 30 calendar days prior to commencement of work
13. DATE OF SUBS. SUB.: ASREQ

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14. DISTRIBUTION	A. ADDRESSEES	B. COPIES	
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			1

15. TOTAL: 1

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16. REMARKS:
Inclusive of the items in paragraph 13 of Attachment D, contractor format is authorized.

G. PREPARED BY: Mr. Alexander M. Gardner I. APPROVED BY:
H. DATE: 13 December 2022 J. DATE:
