VENT HOOD (Explosion Proof)

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of an invitation for bids or a request for proposals shall apply.

THE CODE OF FEDERAL REGULATIONS

- 29 CFR 1910 — Occupational Safety and Health Standards
- 29 CFR 1926 — Safety and Health Regulations for Construction
- 40 CFR 261 — Identification and Listing of Hazardous Waste

(Application for copies should be addressed to Superintendent of Documents, Government Printing Office, Washington, DC 20402)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 70 — National Electric Code
- NFPA 79 — Electrical Standards for Industrial Equipment

(Application for copies should be addressed to National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210)

NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)

- ICS — Industrial Controls and Systems
- MGI — Motors and Generators

(Application for copies should be addressed to the National Electrical Manufacturers' Association, 2101 L Street, NW, Washington, DC 20037)

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

- ANSI Z535.4 — Product Safety Signs and Labels

(Copies available at: http://webstore.ansi.org or ANSI Attn: Customer Service Department, 25 W 43rd Street, 4th Floor, New York, NY 10036)

PSNS&IMF OCCUPATIONAL SAFETY AND HEALTH MANUAL

- OSH-II-9 — Hazardous Energy Control, Lock Out/Tags Plus (LOTP)

(Copies available at: http://webstore.ansi.org or ANSI Attn: Customer Service Department, 25 W 43rd Street, 4th Floor, New York, NY 10036)

1. General Equipment Requirements

1.1 Electrical Components. All electrical components including motors, starters, relays, switches, and wiring shall conform to and be located in accordance with the applicable NFPA, NEMA, and ANSI standards for the intended application.

1.2 Motors. Motors shall be rated for continuous duty. Motors shall be equipped with ball bearings of the sealed and permanently lubricated type. All electrical motors shall meet NEMA-MG1 requirements.

1.3 Bearings. All bearings contained within this machine and the entire system must be U.S. or Canadian manufactured. If they are not U.S. or Canadian manufactured bearings, the vendor must provide a list of exact U.S. or Canadian made equivalent bearings that can be used for replacement of each bearing within this equipment or system. This requirement is in accordance with Defense Federal Acquisition Regulation Supplement (DFARS 252.225-7016).

1.4 Electrical Systems. Electrical components including motors, starters, relays, switches, and wiring shall conform to and be located in accordance with NFPA 79. Electricity available at the installation site is **115 VAC, 60 Hz**. The equipment shall be designed to operate on the available electric utilities. The electrical system shall be complete including any electrical transformer(s) required to modify the existing source voltage to the proper operating voltage of the equipment. All electrical components shall conform to applicable NEMA ICS 1 standards.

1.5 Energy Isolating Devices. The equipment shall be provided with energy isolation devices (e.g. power switches, safety devices, circuit breakers, valves, etc.) that protect personnel from the release of hazardous energy. Hazardous energy includes electrical, mechanical, hydraulic, pneumatic, gravity, or other energy that could harm employees involved in servicing or maintenance of the equipment. The devices shall be installed as the first energy control device on all major components of the system such that the component can be isolated at the component level. The devices shall be designed and manufactured such that they can be placed in the user-selected position (ON or OFF, OPEN or CLOSED) to prevent inadvertent or unauthorized change.

1.6 Electrical Connections. Electrical connections within the equipment shall be complete and shall be made via terminals on the components, terminals, or circuit boards and bussing. Splices between terminations are not permitted. Connections and terminals shall be supported and spaced without the dependence upon the wiring in the components and braced as necessary to assure withstanding the distortion forces associated with available short-circuit currents. Proper identification of wiring, bussing, terminals and circuits for function, polarity, phasing, etc., shall be adhered to throughout the equipment. Identification shall be in the form of wire markers, color coding, permanently engraved plates, and permanent markings on the devices. Adequate spacing shall be maintained throughout to avoid excessive bending of cabling and wiring, to maintain adequate separation and creepage distance between electrical potentials and between these potentials and ground, and to permit ease in disconnecting wiring and cabling during trouble-shooting and repair. In no instance shall clearances and creepage distances be less than those described under NEMA ICS, Part ICS 1-111.

1.7 Grounding: Exposed, non-current carrying metal parts shall be maintained at common, zero ground potential. A grounding stud/lug shall be provided as a means for grounding the equipment. For cord connected equipment, a NEMA type grounding plug which effectively grounds the equipment for the safety of personnel shall be acceptable in lieu of a ground stud or lug on the equipment.

1.8 Electrical Enclosure: Electrical components of the equipment shall be contained in an enclosure(s) of structural and sheet steel. Provisions shall be made for power cable entrance. The enclosure(s) shall be of drip-proof construction and of minimum size consistent with good design practices and ventilation of components.

1.9 Painting: All surfaces shall be painted in conformance with the manufacturer's standard practices and good workmanship. Painting shall result in a highly wear-resistant finish that

guarantees continued protection to surfaces in an indoor environment with a temperature range of 15° to 110° F, up to 100% Non-condensing relative humidity. The manufacturer's standard color shall be provided. **Lead or chromium base paints are prohibited.**

1.10 PCBs: The manufacturer shall provide written certification that any new equipment provided contains no detectable PCB's. The certification shall be on the manufacturer's letterhead and signed by a company official who is empowered to provide that certification.

1.11 Safety devices: All machine parts, components, mechanisms, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standard (29 CFR 1910), General Industry" that are applicable to the equipment itself.

1.12 Safety signs and labels: Safety signs and labels in accordance with ANSI Z535.4 shall be securely attached to the equipment in visible locations, with any safety precautions to be observed by the operator or maintenance personnel permanently marked on the signs.

1.13 Informational Plates: The following informational plates shall be marked by engraving or photo imaging on wear and corrosion resistant metal and permanently affixed to the equipment.

1.13.1 Identification Plate: The following information shall be securely attached to the equipment on an identification plate: Nomenclature, Contractor's name, manufacturers name, equipment model number, equipment serial number, electrical utilities (Volts, Full Load Amps, Frequency, Phases, and Short Circuit Current Rating {SCCR}), date of manufacture, contract number and any other pertinent information for identifying the part as a unique component of the system.

1.13.2 Caution and Warning Plates: "Caution" or "Warning" label plates shall be securely attached to the equipment in visible locations, with any safety precautions to be observed by the operator or maintenance personnel permanently marked on the plates.

1.13.3 PCB Label Plate: A label plate containing "PCB free" certification information per the requirements of Section 1.14 shall be securely attached to the equipment near the manufacturer's identification label plate.

1.14 Standard off the Shelf Components: All materials and parts comprising this system shall be new, of current design and manufacture and shall not have been in prior service except as required for factory testing. Standard, off the shelf components with proven reliability shall be used whenever possible to increase performance reliability and reduce costs. The equipment shall be one of the manufacturer's current production models which has been designed, engineered and sold, or is being offered for sale through advertisements or manufacturer's published catalogs or brochures. Products such as a prototype unit, pre-production model, or experimental unit DO NOT qualify as meeting this requirement. The equipment shall be complete, so that when connected to power, it can be used for the function for which it was designed and constructed.

1.15 Warranty: Supplies and services furnished shall be covered by warranty from defects in design, materials and workmanship. The warranty shall be the manufacturer's standard commercial warranty which shall conform to all the requirements of the contract. Acceptance of the manufacturer's standard commercial warranty shall not minimize the rights of the Government under clauses in the contract, and in any conflict that arises between the terms and

conditions of the contract and manufacturer's warranty, the terms and conditions of the contract shall take precedence. The warranty period shall commence when final acceptance has been achieved as determined when all contract line item numbers have been processed through Wide Area Workflow (WAWF).

1.16 Technical Manuals: A set of three (3) technical manual are required for each specific make, model year, and serial numbered piece of equipment scheduled for delivery under the terms of the contract. The manuals shall provide instructions, illustrations, and other associated data for operations, maintenance, repair, overhaul, including a complete catalog of parts used in the assembly of the end item enabling an average journeyman mechanic to operate, program, maintain, repair, and overhaul the equipment. The manuals provided shall contain complete instructions and information for all equipment, components, assemblies, subassemblies, attachments, and accessories assemble in the end item. The contents of a complete set of technical manuals shall include, as a minimum, the following:

a. Operating instructions including pre-operational checks, start-up, shut down, and emergency shutdown procedures
b. Maintenance, service, and overhaul instructions, including all preventive maintenance schedules and lubrication chart
c. Trouble-shooting guides
d. Parts list containing: illustrations, part numbers, part nomenclature, original manufacturer, cross reference numbers, and recommended spare parts including quantities
e. Energy control procedure, in accordance with 29 CFR 1910.47, OSHA Energy Control Standard to bring equipment to a zero energy state for service and maintenance
f. All mechanical and electrical schematics showing discrete components/block diagrams/wiring diagrams with inputs and outputs identified/system electrical interface documents and drawings for the specific model of all machine equipment/drives/controls supplied
g. Programming requirements

2. **OSHA Approved Certification**.

2.1 The equipment installation and its component parts shall be in compliance with the applicable Occupational Safety and Health Administration (OSHA) regulations in accordance with CFR Title 29, Chapter XVII, Part 1910 and installed in accordance with NEC/NFPA requirements. Approval shall be as specified under the "Approval" and "Acceptance" criteria in the OSHA regulations Subpart "O", Machinery and Machine Guarding paragraph 1910.212 and Subpart "S" Electrical, paragraph 1910.303 and paragraph 1910.399. After equipment delivery and installation, and prior to testing, the contractor shall provide an OSHA Certification Report for approval by the Environmental, Safety, and Health Department at the Receiving Activity. Failure to provide this certification will delay acceptance of the equipment, and could result in rejection for failure to comply with the terms of the contract. The **VENT HOOD (Explosion Proof)** shall be listed or approved, and labeled by one of the following methods:

- The equipment specified herein shall be listed and labeled by an OSHA recognized and approved Nationally Recognized Testing Laboratory (NRTL). Test data reports shall be provided.

- The equipment and its installation specified herein shall be field inspected, approved, and labeled by an OSHA recognized and approved NRTL. Test data/field evaluation reports shall be provided.

2.2 OSHA Compliance Statement: The contractor shall provide signed, written certification of compliance to the requirements of Section 1.11 with the equipment. This certification shall be on manufacturer's letterhead, and signed by a company official or designee who is empowered to provide such signature. Failure to provide this certification report will delay acceptance of the equipment, and could result in rejection for failure to comply with the terms of the contract.

2.3 Components. The equipment shall consist of, but is not limited to the following described principal components, attachments and accessories necessary to meet the operational and performance requirements specified herein.

2.3.1 Vent Hood

2.3.1.1 Shall be Explosion Proof (EP) modified to include EP rated incandescent light fixture

2.3.1.2 Shall contain tempered glass vertical-rising sash with cable pulley

2.3.1.3 Sash stop points shall be labeled

2.3.1.4 Shall be chemical-resistant

2.3.2 Work Surface

2.3.2.1 Shall be designed with corrosion-resistant epoxy resins

2.3.2.2 Shall be a dish design to contain minor spills

2.3.2.3 Shall be compatible with chemical compound Methyl Ethyl Ketone (MEK)

2.3.3 Solvent Cabinet

2.3.3.1 Shall contain dual self-closing doors

2.3.3.2 Shall contain shelves

2.3.3.3 Shall be designed to store flammable material

2.3.3.4 Shall be labeled "Flammable"

2.3.3.5 Shall contain leveling feet

2.3.4 Standard Cabinet

2.3.4.1 Shall contain dual manual closing doors

2.3.4.2 Shall contain shelves

2.3.4.3 Shall contain leveling feet

2.4 Sizes and capacities. The equipment supplied under the requirements of this specification shall conform to the dimensions, sizes, and capacities specified in Table I.

TABLE I. Sizes and Capacities

Vent Hood Power	115 VAC, 60 Hz
Vent Hood Dimensions	84"L x 36"W x 59"H
Sash Opening Dimensions	28" (+/- 2") x 74" (+/- 2")
Exhaust & Static Pressure @ Sash open 100%	1410 CFM, 0.23 S.P.
Sash Sightline from work surface	37" (+/- 2")
Work Surface	84"L x 36"W Minimum 0.25" dish
Solvent Cabinet	48"L x 22"W x 36"H Support loads up to 800lbs 14" Filler Panel
Standard Cabinet	36"L x 22"W x 36"H Support loads up to 800lbs 14" Filler Panel