	EHS Requirements for Large Equipment Purchases	Revision: #7
	75B-07.0-06	Effective: 4/30/2025

1.0 Purpose:
To define the requirements for purchased equipment at the BEP.

2.0 Scope:
Applies to the acquisition of large equipment at the BEP D.C. Facility (DCF) and Western Currency Facility (WCF).

3.0 Roles and Responsibility:

3.1 The **EMS Facility Management Representative** is responsible for:

- Communicating with DCF OEHS or WCF EHS Program Managers to ensure that specifications are kept up to date.

3.2 **Contracting Officer Representatives (CORs)** are responsible for:

- Communicating the specifications of this procedure to contractors (as applicable); and
- Communicating with the EMS Facility Management Representative when these requirements need to be changed.

3.3 **Contractor Personnel** are responsible for:

- Following these requirements; and
- Communicating with their COR when there is uncertainty about these specifications.

4.0 Requirements and Specifications

4.1 Environmental, Health and Safety (EHS) requirements

All equipment delivered to the BEP shall be designed to minimize all risks of injury to BEP employees. All equipment shall be in full compliance with government and commercial safety and health regulations and requirements. The following are specific safety and environmental requirements for major production machinery for the BEP.

4.2 General Safety

Equipment shall be designed to always prevent injury to operation and maintenance personnel. It shall be equipped with service access equipment, such as catwalks, access platforms, access ladders, lifts, and other equipment

for operation and maintenance. All catwalks, access platforms, access ladders, lifts, hoists, and any other equipment that are furnished, shall be built and tested to comply with the applicable American National Standards Institute (ANSI) and/or Occupational Safety and Health Administration (OSHA) standards including OSHA 29 CFR Subpart D.

4.3 Noise Level

The maximum noise produced by the operation of the equipment at full production rate shall not exceed 85 decibels A-weighted sound pressure level (85 dBA) when measured at 914 mm (3 feet) distance along the plan view of the equipment and at an elevation of 1,524 mm (5 feet). If the requirement cannot be met, the vendor shall meet with the Contract Officer (CO), an EHS representative, and the CO's team to discuss all alternatives including required PPE to operate the machine safely. Exceptions may be granted if the equipment does not require an operator to be present for continuous operation.

4.4 Machine Guarding

All hazardous mechanical motions and actions shall be guarded as specified by OSHA 29 CFR Subpart O and all furnished safeguards shall be designed, built, and tested in accordance with ANSI B.11 or ANSI B.65 standards. Machine safeguards must prevent hands, arms, or any other part of a workers' body from making contact with dangerous moving parts. All covers and safety guards shall be firmly affixed to the machine or otherwise interlocked with the equipment's function controls to prevent its operation while any cover or guard is open or absent. Covers and guards shall be easy to remove by BEP authorized maintenance personnel to facilitate the removal of mechanical and electrical parts for repair.

4.5 Mechanical Entrapment Response Procedures

The manufacturer shall provide written mechanical entrapment response procedures for the emergency release of persons trapped in machinery. **Training on the procedures shall also be provided.** This requirement applies to equipment that has any potential entrapment point(s) where hands, fingers or any other body parts could become caught between moving parts.

4.6 Sharp Edges

All sharp edges and corners, which present personnel hazards, shall be guarded or padded.

4.7 Heated Surfaces

Equipment shall be designed to prevent heated surfaces from causing burns to personnel during operation.

4.8 Prohibited Materials

Specific prohibited materials shall not be used in the equipment. These prohibited materials are listed in clause 4.1 of 75D-07.0-07 Restricted Materials at DCF and in clause 5.1 of 75W-08.0-04 Restricted Materials at WCF.

4.9 Hazardous Emissions

Operation of the equipment shall not result in worker exposure to airborne contaminants exceeding current maximum allowable concentrations established by Occupational Safety and Health Administration (OSHA), the American Conference of Governmental Industrial Hygienists (ACGIH) or National Institute of Occupational Safety and Health (NIOSH) standards. When the standards differ between organizations, the most stringent shall apply.

4.10 Interlocks

All furnished interlocks shall shut off or disengage power, stop the moving parts and prevent the automatic restart of the machine when the guard is open and/or the device is activated. An interlocked guard may use electrical, mechanical, hydraulic, or pneumatic power or any combination of these. However, an electrical interlock shall be provided to prevent accidental starting with the mechanical lock engaged.

4.11 Hazard Communication

Safety Data Sheets (SDS) for all supplied and specified chemicals that are part of the process shall be supplied by the contractor to the COR. The COR shall forward all SDSs to OEHS or WCF EHS for review. The SDS and product labelling shall comply with OSHA, as listed in standard 29 CFR 1910.1200, with particular emphasis on paragraphs (g) and (i). All SDS must be the most current version available and package labeling must be in English.

4.12 Overload Protection

Equipment shall be provided with overload protection and power factor correction devices to prevent damage to components and operating personnel.

4.13 Safe Ready

All control stations shall include a "safe-ready" collar. Upon turning the collar to the safe position, it shall be impossible to start the system from any other station. Console shall indicate that the particular interlock including emergency stop buttons causes the system to start or not.

4.14 Emergency Stop

Emergency stop buttons shall be designed in accordance with ISO 13850: Safety Of Machinery - Emergency Stop Function. Such buttons shall be provided at multiple strategic locations to minimize the time required to reach them. Emergency stop buttons shall be of the pronounced mushroom type, red in color. Emergency stop buttons shall remain activated with a blinking red light once

depressed until manually reset.

4.15 Inching Interlock

Whenever an inching of the equipment occurs, only the control station from where the inch was performed shall be able to cause the equipment to move until the safe-ready is activated and deactivated. The equipment shall be designed such that the use of “cheaters” to override the interlock function is not necessary.

4.16 Energy Isolation

Disconnect or lockout devices shall be provided and identified with signage for all sources of energy on the equipment; this includes electrical, hydraulic, pneumatic, and kinetic sources of energy. All isolating devices (levers, breakers, valves, etc.) for all associated energy sources (electrical, hydraulics, pneumatics, gravity, etc.) shall be identified by a color-coded tag which indicates the type of energy source, the magnitude of the energy and an ID number. All isolating devices shall be capable of being locked out with a standard locking device and/or padlock. Stored sources of energy such as, pneumatic and hydraulic forces shall be automatically bled and returned to a zero-energy state when an interlocked device (i.e., a guard or a door) is opened.

4.17 UV Curing/Exposing Equipment

All equipment with ultraviolet radiation systems shall be designed such that no operator is exposed at or above permissible threshold levels established by the ACGIH. Lighting type, output energy (watts) and wavelength (nm) must be provided in writing for all UV curing equipment. LEDs used in the UV curing process must meet the requirements of ANSI/IESNA RP-27.3-07 Photobiological Safety for Lamps - Risk Group Classification and Labeling.

4.18 Hydraulic & Pneumatic Systems

All hydraulic and/or pneumatic systems shall have functional isolation, i.e., when part of a system is operating, no other part of the system shall be adversely affected by pressure drop, flow transients, etc. All hydraulic and pneumatic equipment employed in the system shall conform to ISO 4413:2010/ISO 4414:2010 standards. Hydraulic and pneumatic pumps shall be energy efficient.

4.19 Laser Systems

All equipment with laser systems shall comply with the latest version of the Laser Institute of America’s ANSI-Z136.1 standard, *American National Standard for Safe Use of Lasers,* and 21 CFR 1040 and shall be designed such that no operator is exposed at or above permissible threshold levels established by the ACGIH.

4.20 Illumination

Large equipment (such as printing presses) with covered workstations such as impression cylinder, wiping roller, inking-in areas, etc., shall be illuminated to 20 foot-candles of luminance by the equipment manufacturer, in accordance with the latest version of ANSI RP-7.

4.21 Industrial Ventilation

Equipment which emits airborne contaminants which exceed permissible exposure concentrations as established by OSHA, ACGIH and National Institute of Occupational Safety and Health (NIOSH) shall be equipped with local exhaust ventilation (LEV). LEV shall be designed in accordance with the ACGIH Industrial Ventilation: A Manual of Recommended Practice for Design, (latest edition). All industrial ventilation system parameters and design shall comply with the OSHA Ventilation Standard, 29 CFR 1910.94.

4.22 Radiation Equipment

All equipment with ionizing radiation shall comply with the BEP's Radiation and Laser Safety Program 75D-05.0-01. The equipment shall be designed such that no operator is exposed at or above occupational exposure limits outlined in 29 CFR 1910.1096(b)(1) Table G-18.

4.23 Material Handling Assistance

The equipment shall include ergonomic lifting aids for any lifting of more than 32 pounds by the operators.

4.24 Environmental Protection Requirements

All equipment, materials, and processes must meet or exceed standards in the regulations and executive orders listed below. Other environmental regulations, executive orders and guidance may also be applicable. The environmental protection requirements focus on emissions, discharges, and waste products impacting air, water, and land.

a. References
   - Federal Regulation: Environmental Protection Agency, EPA Clean Air Act, as Amended
   - 40 CFR 403 - General Pretreatment Regulations for Existing and New Sources of Pollution
   - 40 CFR 433 – Metal Finishing Point Source Category
   - 40 CFR 261 – Identification and Listing of Hazardous Waste
   - District of Columbia Municipal Regulations (DCMR), Title 20, Subtitle A, Air Quality Regulations
   - District of Columbia Municipal Regulations (DCMR), Title 20, Subtitle E, Hazardous Waste Regulations
   - District of Columbia Municipal Regulations (DCMR), Title 21, Water and Sanitation, Chapter 15, Discharges to Wastewater System Regulations
   - P.L. 102-486, Energy Policy Act of 1992, October 24, 1992

- 40 CFR Part 247, Comprehensive Guideline for Procurement of Products Containing Recovered Materials, May 1, 1996

- Texas Commission on Environmental Quality (TCEQ) regulations in Texas Administrative Code Title 30 Chapters 101 through 335 as applicable.

- City of Fort Worth Code of Ordinances, Part II City Code; Chapter 12.5 Environmental Protection and Chapter 16: Health and Sanitation, Chapter 13 Fire Prevention and Protection.

b. Air Pollution Control

The DCF is in a non-attainment area for Volatile Organic Compounds (VOCs) and 2.5 Particulate Matter (PM 2.5). The WCF is in a non-attainment area for VOCs. Any equipment to be installed in either the DCF or the WCF must meet Lowest Achievable Emissions Rate (LAER) standards in accordance with EPA, TCEQ, and District of Columbia regulations. Maximum Achievable Control Technology (MACT) standards may also be applicable to control the emissions of any Hazardous Air Pollutants that result due to the installation of new equipment or change in the method of operations of existing equipment.

The Contractor shall identify potential source locations of air pollutant emissions from the equipment. Equipment must be designed so that pollutants can be captured and ventilated to air pollution control devices. If emission capture and control are required, the Contractor may be required to propose and provide a design and equipment for capture and control of the pollutant in question.

BEP check as appropriate for this solicitation:	
☐	Contractor IS required to propose and provide a design and equipment for capture and control of pollutants.
☐	Contractor IS NOT required to propose and provide a design and equipment for capture and control of pollutants.

Third Party Performance Test— A compliance test which demonstrates that the equipment and/or air pollution control device (APCD) meets the applicable EPA or DC performance requirements, may be required. If required, the compliance test must be performed according to a test plan that uses approved EPA methods and be submitted to the Office of Environment, Health and Safety (OEHS) or WCF EHS for approval prior to the test.

BEP check as appropriate for this solicitation:	
☐	Contractor IS required to perform third party compliance testing to demonstrate equipment and to meet emission performance requirements.
☐	Contractor IS NOT required to perform third party compliance testing to demonstrate equipment and meets emission performance requirements.

Construction Permits—The DC Air Quality Division is required to review all

equipment that may reasonably be expected to emit air pollutants prior to installation. The contractor must provide sufficient information to the Bureau so that the OEHS can prepare an application to install the equipment. Equipment and the associated control devices may not be installed until the District of Columbia issues a Construction Permit to do so. Note that it takes a minimum of 6 months from the time of submission of the permit application to receive a permit to construct.

Interlocks and Standby Mode—All APCDs will be interlocked with the operating equipment to prevent operation without emission capture. The Contractor is responsible for coordinating with Bureau representatives, including OEHS or WCF EHS, to establish the parameters that warrant a shutdown of equipment. Standby Modes shall be established for periods when equipment is not operating. The Contractor shall document the parameters established and include this information in the operation and maintenance manuals.

c. Wastewater

Information shall be provided to the OEHS or WCF EHS through the COR on the characteristics of all effluents (liquids which can be pumped or gravity flow liquids) that will come from the equipment, either regularly or intermittently, including routine or scheduled maintenance work. This information will be used to determine the feasibility and method of treating the effluents either in the Wastewater Pre-Treatment Plant or requiring that the materials be handled through the Solid/Hazardous Waste Program.

d. Energy, water, and materials usage programs

The Contractor shall make every effort to provide the most energy and water efficient equipment to the Bureau. The contractor shall furnish all information to document the energy and water usages for the system, including all calculations. The Contractor shall comply with:

- P.L. 102-486, Energy Policy Act of 1992, October 24, 1992
- 40 CFR Part 247, Comprehensive Guideline for Procurement of Products Containing Recovered Materials, May 1, 1996.

e. Fluorescent Bulbs

All lamping shall be LED.

f. Solid Hazardous Waste

Equipment that generates non-liquid wastes (wastes which cannot be pumped or which do not flow by gravity) either continuously or intermittently, including scheduled or routine maintenance work, in addition to normal operation, must be designed to allow for removal of the waste in an ergonomic manner and to allow the operator to transfer the waste into a 55 gallon drum – 1A1, 1A2, or other appropriate container, as needed.

Information shall be provided as to the specific quantity, nature and characteristics of the non-liquid waste generated so that a waste determination may be performed by OEHS in accordance with 40 CFR 261 – Identification and Listing of Hazardous Waste.

5.0 **Related Documents**

5.1 75D-00.0-08 Operational Planning and Control
5.2 75D-07.0-07 Restricted Materials at DCF
5.3 75W-08.0-04 Restricted Materials at WCF

Revision	Purpose of Revision	Effective Date	Approved by:
1	Changed Doc numbers	04/18/14	Neal Mohlmann
2	Updated Executive Orders and MSDS to SDS	07/17/15	Neal Mohlmann
3	Updated approver and technical changes (LED bulb specified, low-mercury removed, rescinded executive orders removed)	8/16/18	Virginie Antoine-Pompey
4	Expanded the purpose and scope to include all of BEP. Modified noise requirement and SDS requirement. Changed Procedure number to 75B to reflect new procedural scope	6/18/19	Virginie Antoine-Pompey
5	Removed required for 1-second equipment stoppage upon e-stop activation, and added ISO 13850 reference. Added product labelling requirement in 4.11. Added NIOSH standards to 4.9. Added UV curing/exposing requirements to 4.17.	5/7/20	Virginie Antoine-Pompey
6	Updated reference to ISO 4413:2010/ISO 4414:2010 standards in section 4.18. JIC standards have been replaced with ANSI/NFPA standards.	1/31/22	Virginie Antoine-Pompey
7		4/30/2025	Virginie Antoine-Pompey