BP WIND ENERGY
POLICIES AND PROCEDURES

Flammable Combustible Liquids

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BP Wind Energy	***Document Number: HSSE 28.10.01***

Flammable Combustible Liquids

1.0 Purpose/Scope

1.1 This procedure provides the minimum requirements to be followed for the storage of flammable or combustible materials in the workplace.

1.2 It applies to all employees and on-site contractors engaged in operations covered by BPWE HSSE procedures.

2.0 Reference

2.1 BPWE HazCom Procedure, HSSE 50.10.01

2.2 OSHA 29 CFR 1910.106, Flammable and Combustible Liquids

2.3 OSHA 29 CFR 1926.152, Flammable and Combustible Liquids

2.4 National Fire Protection Association NFPA 30 - Flammable and Combustible Liquids Code

2.5 National Fire Protection Association; NFPA 58 – LP Gas Code

3.0 Responsibilities

3.1 All Users – Before storing and/or handling flammable or combustible liquids:

A. Be familiar with and adhere to all requirements contained in this procedure,

B. Review Material Safety Data Sheet (MSDS) to identify all hazards.

3.2 Facility/Project Managers

A. Verify all requirements of this procedure are implemented and enforced.

B. Ensure that flammable or combustible liquids are stored in a safe manner and in accordance with this procedure.

C. Confirm that all personnel are properly trained before being allowed to load or unload flammable or combustible products, and verify that all training has been documented.

4.0 Acronyms and Definitions

Acronyms Table

Acronym	Definition
DOT	US Department of Transportation
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
psia	Pounds per square inch absolute

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Flammable Combustible Liquids

Definitions Table

Term	Definition
Boiling Point	The temperature at which a liquid boils, given in either °F or °C, at a pressure of 14.7 pounds per square inch absolute (psia).
Bonding	The process of establishing electrical continuity between two or more conductive surfaces.
Closed Container	A container sealed by means of a lid or other device that will not allow liquid or vapor passage at ordinary temperatures.
Combustible Liquids	Liquids that have a flashpoint at or above 100°F (37.8°C). Combustible liquids are subdivided as follows: • Class II liquids have flashpoints at or above 100°F (37.8°C) and below 140°F (60°C). • Class IIIA liquids have flashpoints at or above 140°F (60°C) and below 200°F (93.3°C). • Class IIIB liquids have flashpoints at or above 200°F (93.3°C).
Container	Any can, barrel or drum that conforms to OSHA and/or DOT requirements.
Flammable Liquids	Liquids that have a flashpoint below 100°F (37.8°C) and have a vapor pressure not exceeding 40 psia at 100°F(37.8°C). Flammable liquids are known as Class I liquids and are subdivided as follows: • Class IA liquids have a flashpoint below 73°F (22.8°C) and a boiling point below 100°F (37.8°C). • Class IB liquids have a flashpoint below 73°F (22.8°C) and a boiling point at or above 100°F (37.8°C). • Class IC liquids having a flashpoint at or above 73°F (22.8°C) and below 100°F (37.8°C). **NOTE:** The Department of Transportation (DOT) definition of flammable liquid is slightly different. Refer to DOT shipping regulations for clarification. Department of Transportation; 49 CFR 174.67, 49 CFR 177.837
Flashpoint	The lowest temperature at which a liquid will give off vapors in a sufficient concentration to form an ignitable mixture with air near the surface of the liquid.
Grounded	Electrically connected to the earth or some other conducting body that serves in place of the earth.
Portable Tank	A closed container with a liquid capacity of more than 60 U.S. gallons and not intended for fixed installations.
Safety Can	A container of not more than five gallons capacity, having a spring loaded lid and spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure.

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Flammable Combustible Liquids

5.0 Procedure

5.1 Bonding and Grounding Dispensers

A. Flammable and combustible liquids can present a static electricity hazard, depending on their ability to generate static electricity, how well they conduct electricity (conductivity), and their flash point. Solvents and fuels produced from petroleum, e.g., benzene, toluene, mineral spirits, gasoline, can build up a charge when they are poured or flow through hoses.

B. To prevent static electricity build-up and to prevent sparks from causing a fire, it is important to bond and ground metal dispensing and receiving containers together before pouring.

1. One way to bond containers is to securely attach a special metal bonding strap or wire to both containers.
2. Some liquid transfer pumps have self-bonding hoses.
3. Keeping contact between the metal container and a conducting nozzle can prevent sparking but this method is unreliable because it can be hard to make and maintain good electrical contact for the entire transfer.

C. In addition to bonding, the dispensing container must be grounded so that the static charge can drain off to ground.

1. Grounding methods include connection to a buried metal plate, a metallic underground water pipe (never gas), and metal building framework.
2. Specially designed and approved bonding and grounding wire assemblies are available from safety equipment retailers.

D. For medium-sized containers (5 – 60 US gallons), it is advisable to ground the metal container and fill the container from the bottom through a long, grounded metal pipe or grounded conductive hose.

E. When filling non-conducting portable containers, the NFPA recommends that a grounded dip pipe or grounded wire be in the liquid in the container while it is being filled. The filling rate should be minimized, especially if there is a filter in the line.

F. **Plastic containers** will **not** be used to collect, store or transfer flammable liquids, unless liquids are incompatible with a metal container and an acceptable alternative is secured.

5.2 Flammable Materials Storage Cabinet

A. Flammable liquids will be stored in a UL listed/FM approved metal flammable materials cabinet that:

1. Has a label that states “FLAMMABLE – KEEP FIRE AWAY”,
2. Is in an area with no more than three flammable storage cabinets,
3. Contains not more than 60 gallons of flammable or 120 gallons of combustible liquid in a single cabinet.

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5.3 Dispensing and Handling Bulk Flammable Liquids

A. Drip Cans

- A drip-can should be positioned below each drum faucet to catch spills or any leaking from the faucet. A faucet that routinely leaks should be repaired or replaced as soon as practical.
- One-gallon size drip cans are adequate to provide a safe capacity margin between routine emptying.
- Disposal of the collected drippings must be in accordance with local, state, and federal law.

B. Drum Faucets

- Safety faucets, of non-sparking material, for drawing off flammable liquids from drums should be self-closing and equipped with drip-proof seals.
- Faucets should be FM-approved and have provisions to be padlocked to prevent unauthorized withdrawal of drum contents.

C. Drum Venting

- Drums of flammable liquids require an FM approved drum venting device to relieve pressure build-up due to heat and to prevent creation of a vacuum when liquid is being drained off or the drum is subject to sudden cooling.
- Either pressure or vacuum can cause container failure.
- If the drum is equipped with an FM-approved transfer pump, no auxiliary venting devices are required because automatic pressure and vacuum relief are incorporated in the pump's design.

D. Drum Pumps

- Pumping of flammable liquids from drums into safety containers is faster and provides fewer opportunities for spills and procedural errors.
- When pumps are used, no drip cans or separate vents in the drum are required.
- Always use FM-approved pumps.
- The pump is installed directly in the two-inch drum bung opening.
- The drum remains in the vertical position, which reduces handling time and eliminates the need for a drum cradle.
- Pumps are available with either a fill hose or spout and drip tray.
- Pump hoses should have integral bonding wires (FM approved).
- Pumps with drip trays used to fill small containers require a separate bonding wire.

5.4 Fire Extinguisher Rating

A. A fire extinguisher with a rating of at least 10A, 60BC, C is required.

B. The fire extinguisher must be located no closer than 25 feet and no further than 75 feet away from any flammable liquids storage/dispensing areas outside of an approved storage cabinet.

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5.5 Container Labeling

A. All containers containing flammable or combustible liquids must be labeled as to their contents in accordance with the BPWE Hazard Communication Procedure.

B. This includes but is not limited to fuel cans or "safety cans" containing gasoline, diesel, or other blended fuel.

C. When stored, containers should be positioned so their labels can be viewed.

5.6 Routine Inspection

A. Storage areas should be routinely inspected to ensure that drums and containers are kept closed, that their labels are readable and intact, and that all small containers are stored safely inside an approved storage cabinet.

B. Metal drums should be held on secondary containment pallets and not be allowed to rest on concrete flooring.

C. Dampness from the concrete can result in rusting and failure of the bottom seam.

D. If a drum shows signs of weeping or bulging, the contents should be immediately transferred into a new drum or the drum placed inside a containment drum.

5.7 Environmental

A. Flammable liquids, such as gasoline, should never be used for general maintenance cleaning. Improper use represents an extreme fire danger and a health risk to the user and to others in the area. The use of flammable liquids for general maintenance cleaning may also violate local air quality control district rules and regulations.

B. Always be aware that some combustible liquids can be as dangerous as flammable liquids depending on local conditions such as temperature and altitude. On very hot days or at high altitude, it is more likely that a combustible liquid can emit sufficient vapor to create a hazard.

C. Storage containers holding flammable or combustible liquids should not be stored in areas subject to direct sunlight.

D. Dispensing drums should be equipped with conservation vents to minimize product loss due to tank breathing. Dispensing drums should be shielded from exposure to direct sunlight, strong drafts, or sudden changes in temperature.

E. Storage areas should be bermed and designed to contain storage volumes to prevent spillage from leaving the area.

F. Flammable liquids should be purchased according to need since unwanted or unusable liquid waste requires disposal as a hazardous waste under local regulations. Keep all waste products segregated to promote recycling.

G. Periodically review the need to use and store flammable and combustible liquids. Assess whether:

- Vehicles can be fueled at a nearby station.
- Diesel equipment can be used in place of gasoline or propane equipment (Note: The choice of fuel type equipment to be used may be dictated by permit conditions.).
- Aqueous cleaners can be used in place of solvents.

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H. Waste Disposal: Disposal of empty drums and/or any unused flammable or combustible liquids shall be done by a BPWE approved, licensed hazardous waste disposal contractor.

6.0 Training

6.1 All personnel engaged in flammable and combustible liquids storage operations are to be properly trained in accordance with this HSSE procedure.

7.0 Auditing

7.1 The requirements called for in this procedure are subject to periodic inspection by the BP site manager and annually during the BPWE site specific audit.

7.2 This procedure shall be audited (and updated as necessary) every three years.

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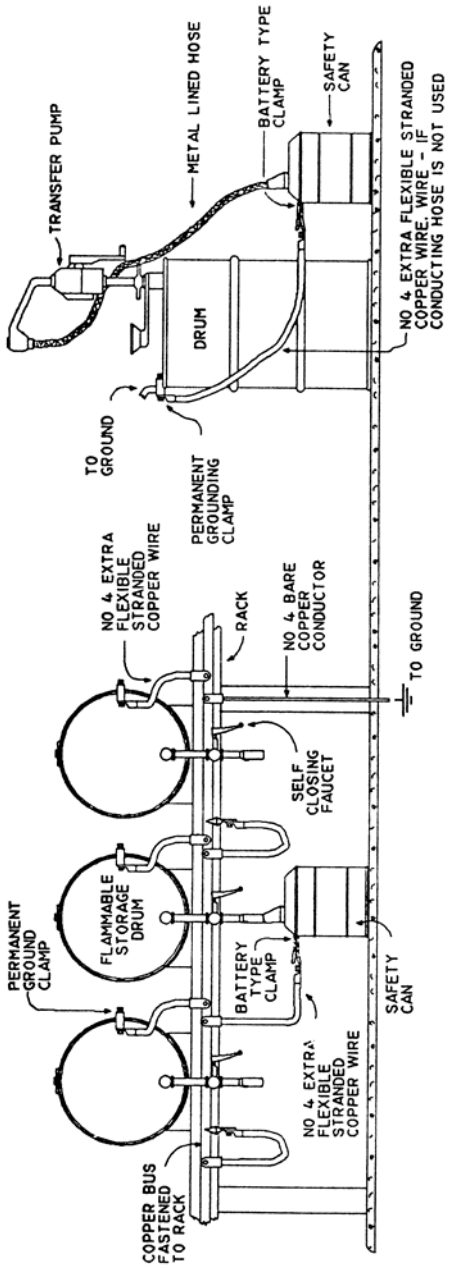
Attachment A: Guidelines for Flammable Liquid Dispensing



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