

BP OIL -- TOLEDO REFINERY

	Toledo Refinery	Procedure No.: SAF 026
Effective Date: April 8, 2011	Personal Protective Equipment (PPE) Policy	Rev. No.: 5 MOC# M2011511-001
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SCOPE	This procedure describes the appropriate personal protective equipment that each employee, contractor and visitor shall wear to prevent injury. It describes what is required, when and where it shall be worn.	
HEALTH Special PPE & Special Hazards	Proper selection and use of PPE prevents harmful exposure to eyes, ears and skin, and lungs.	
SAFETY	Protection from flash fire. Protection of eyes, face, feet , hands and head, and respiratory system.	
REFERENCE DOCUMENTS	OSHA 29 CFR 1910.132 OSHA 29 CFR 1910.136 OSHA 29 CFR 1910.133 OSHA 29 CFR 1910.138 OSHA 29 CFR 1910.135 OSHA 29 CFR 1910.134 29 CFR 1910.95 "Occupational Noise Exposure", BP Toledo Refinery Respiratory Protection Program, SAF 081 Hearing Protection, SAF 043 Flame Retardant Clothing Refining Safety Requirements for Sulfuric Acid Alkylation (REF GP 47-0004)	
SPECIAL MATERIALS & EQUIPMENT	Personal Protective Equipment Safety Glasses w/side shields Goggles Hard Hat Fire Retardant Face Covers Work shoes/boots	Filter Lenses Respirators Ear Muffs Face Shield Ear Plugs Gloves
QUALITY	ANSI/ASSE Z87.1-2003 approved eye and face protection ASTM F2412-05 Standard Test Methods for Foot Protection ASTM F2413-05 Standard Requirements for Protective Footwear ISEA/ANSI Z89.1-2003 approved helmet NIOSH – approved respirators	
ENVIRONMENTAL	N/A	

OVERVIEW

This procedure defines the minimum expectations for Personal Protective Equipment (PPE) when entering or working in the Toledo Refinery. It is mandatory for all BP Toledo Refinery employees, contractors and visitors to wear PPE at Toledo Refinery as prescribed in this procedure. Areas included, but not limited to, are all process and utility areas; blender; lab; work areas in shops; warehouse; marine dock; water intake; waste water treatment areas; within the tankage dikes; fire fighting training grounds; and flammable storage areas. All jobs begin with a pre-task risk assessment to identify the necessary PPE to safely complete the task at hand.

Statement of Procedure

Minimum PPE required in the plant consists of: Fire Retardant Clothing, hardhat, safety glasses w/sideshields, work shoes, gloves when performing work or exposed to cut hazards, and hearing protection. Personal H₂S meters are required to warn about the potential presence of hazardous concentrations of H₂S. Additional PPE requirements & exceptions are defined in this procedure.

Green Zones (areas not requiring PPE) have been designated as: employee/contractor/visitor parking lots on the perimeter of the plant; the main entrance (40th Avenue) corridor to and including the South POD; and the Contractor/TAR trailer city north of 26 tank. Maps designating these areas are available.

- 1.0 Exceptions
- BP employees, contractors, visitors etc., will generally not be required to wear PPE inside buildings or enclosed vehicles. This procedure will detail any vehicles or buildings where PPE must be worn.
 - BP employees, contractors, visitors etc., will generally not be required to wear PPE inside the 'green zone' on the attached map. This exception is intended to allow people to travel to/from points in the 'green zone' without PPE. A pre-task risk assessment shall be conducted for all jobs inside the 'green zone' to determine the appropriate PPE for the job.

NOTE: The Shift Relief Policy requires specific PPE for Operations Personnel even if in the green zone.

- PPE is not required when walking to/from an enclosed motor vehicle and a building outside the 'green zone' provided the parking space is in close proximity (<50') to the building and not in a process unit.
- There must be a temporary MOC held for any areas outside the 'green zone' that are requested for exemption from the PPE policy (e.g. temporary project office villages, TAR villages). A member of the safety department should be involved in the MOC or approve it to ensure all OSHA regulations are met.
- North, East and West tank fields, Marine Dock, Water Intake, Decanted Oil Truck Loading Rack, Decanted Oil Railcar Loading Rack, Asphalt Loading Rack, LPG Loading Rack, Blender, and WWTU are exempt from the hearing protection requirements except as noted with signage or as directed by Area Operations personnel.
- Commercial rail road crews are exempt from the PPE policy.

- FRC is not required for truck drivers loading asphalt at gate 25.
 - EMS, Fire Dept. & Law Enforcement are exempt from standard PPE when responding to an incident. The PPE requirements will be determined by the on-scene Commander/Safety Officer.
 - Toledo ERT conducting marine operations on the water, on the boat, and at the Water Intake are exempt from standard PPE. The ERT will follow the ERT standard operating procedures under the direction of the On-scene Commander.
 - A variance from minimum PPE requirements may be made when the PPE prevents the task from being performed. The variance shall be agreed upon by the Area Authority, Performing Authority, and Safety Representative. This variance shall be documented as part of the Work Control Certificate (WCC) package.
- 2.0 Contractors & Visitors
- Contractor employees and visitors are required to wear personal protective equipment in the same circumstances as BP employees. The Main Gatehouse has a limited supply of personal protective equipment (PPE) for loan. Upon departure from the Refinery, the checked-out PPE will be returned to the Gatehouse / Safety Store. Visitors who do not return PPE will be responsible for the replacement cost and their company will be invoiced accordingly.
 - Truck drivers entering the Refinery for loading and/or unloading of bulk products, such as: LPG, Vac BTMS, Decanted Oil, etc., are expected to furnish their own PPE. A limited supply is available for loan at the Main Gatehouse.
- 3.0 BP Employees
- All BP employees will receive personal Fire Resistant Clothing (FRC), an insulated FRC jacket and a fire retardant hard hat liner in accordance with the following: BP will purchase Nomex clothing for Toledo Refinery employees through the Purchasing Department. Employees who work outside will be furnished with their choice of one; parka; insulated bib overalls; or insulated overall.
 - BP employees receive a shoe certificate to aid in the purchase of approved work shoes. This program is administered by the Human Resources Department.
 - All other PPE is available at the safety store.
- 4.0 Procedure
- PPE will be required **at all times** outside of the green zone except as defined in section 1.0. The green zone includes those areas marked on the attached map along with areas outside of the refinery fenceline, such as Lallendorf or the Navarre training center.
 - PPE will be required in certain buildings within the green zone as defined in section 5.0.
 - PPE may also be required in the green zone based on task. The risk assessment will determine what PPE is necessary and be documented in

the WCC packet or Job Safety Analysis (JSA).

- Minimum PPE consists of; Fire Retardant Clothing, safety glasses w/sideshields, hardhat, gloves while performing work or exposed to cut hazards, work shoes/boots, and hearing protection.
- In addition to the minimum PPE requirements, a personal hydrogen sulfide (H₂S) meter is required outside the green zone at all times per SAF 087 H₂S. It is however important to note that these monitors are not PPE and will not protect you from H₂S exposure. These devices are warning devices which alert you to the potential presence of hazardous concentrations of H₂S.
- Additional PPE above the minimum standard is required in those areas marked in high visibility (aurora pink) paint. These areas indicate the presence of acid/caustic containing equipment. A face shield is required to enter the areas. Prior to entering these areas, contact the unit operator for additional PPE requirements.
- Additional PPE is required in sulfuric acid alkylation units for activities that involve potential exposure to acid or caustic systems where engineering safeguards, such as shields or closed systems, are not in place for protecting personnel from splash. Examples of these activities include sampling or draining, bleeding pumps, or preparing equipment for maintenance or opening equipment. Required PPE for these tasks shall include face shield, chemical goggles, acid/caustic-resistant gloves and boots, and acid/caustic-resistant jacket and pants (or other acid/caustic-protective clothing, such as tri-laminate Gortex/Nomex). This PPE should be considered during the risk assessment for other acid or caustic systems.

Fire Resistant Clothing (FRC)

- Fire retardant clothing is most effective if it is worn outside all other clothing. Layering of clothing under the fire retardant clothing should provide comfort in all climates. It is recommended that FRC be worn over clothing made of natural fibers and long sleeves / long pants.
- FRC must be in good condition and free of holes or tears.
- When outside of buildings, FRC must be worn to cover the arms, legs and torso (zipped up, sleeves rolled down).
- Nomex IIIA[®] is the fabric of preference for BP employees. At a minimum, FRC fabrics shall be the equivalent of 6 oz./yard per Nomex IIIA[®] or an arc rating of 5.7 ATPV (Arc Thermal Performance Value).
- Refer to SAF 043 Fire Retardant Clothing Procedure for more information.
- FRC helmet liners are recommended for warmth, however, hooded sweatshirts are permitted. If hooded sweatshirts are worn, cotton is

preferred. Drawstrings should be removed or tied back in certain situations to prevent them from catching in rotating equipment.

- The following items may be worn over FRC:
 1. Rain gear.
 2. High visibility safety vests.
 3. Tyvek coveralls.
 4. Chemical protective suits.
 5. Personal fall protection equipment.
 6. Personal floatation devices such as life jackets or survival suits when working on or near waterways.
 7. Other PPE as determined in the pre-job risk assessment and specified on the WCC.

Eye and Face Protection

- All personnel will wear only approved safety glasses with side shields or goggles. Each type will meet or exceed ANSI Z87.1 – 2003 basic impact standards.
- Sunglass type safety glasses may be worn from dawn to dusk.
- Eye protection is not required when operating or riding in an enclosed vehicle. Note: If the window is open the vehicle is no longer enclosed and minimum eye protection is required.
- Contact lenses may be worn under approved safety glasses
- Visitors to plant sites will wear the minimum eye protection provided by their own safety glasses, or by special plastic spectacles that can also cover dress-style glasses, or by wearing temporary visitors' spectacles furnished by the refinery.
- Each affected person shall use eye protection that provides rigid side shield protection. Detachable rigid slide-on or clip-on side shields are acceptable.
- An ANSI Z87.1 - 2003 basic impact approved faceshield over safety glasses is required for the following tasks:
 1. line breaking
 2. rodding out bleeds
 3. handling and sampling of acids, caustics & other corrosive chemicals
 4. handling and sampling of hot asphalt
 5. lighting furnace burners
 6. looking into furnaces in operation
 7. handling and sampling hydrocarbons
 8. high pressure water blasting (>100 psi)
 9. when using a grinder or powered wire wheel
 10. chipping or hammering that could result in flying fragments or debris
 11. entry into areas marked in high visibility (aurora pink) paint
 12. as determined in the pre-job risk assessment and specified on the WCC

- ANSI Z87.1 - 2003 basic impact approved goggles shall be worn for the following tasks:
 1. working/cleaning in the FCC Regenerator until dust free
 2. mixing refractory, mortar or other dusty materials
 3. turbinning furnace tubes
 4. handling or working around materials that generate excessive dust
 5. as determined in the pre-job risk assessment and specified on the WCC.

- To protect against direct gas welding light or reflected rays in confined spaces, filter lens burning goggles shall be worn. To protect against indirect arc rays when assisting welders, dark green plastic cover goggles shall be worn.

- When doing arc welding, filter lens, arc welding shields/hoods over safety glasses shall be worn.

- The refinery will furnish prescription safety glasses in approved frames for BP employees per the terms and conditions of the Prescription Eyewear Program.

- The employee will pay the full cost of his/her refractive examination by a vision specialist. The employee will choose his/her own vision specialist, who will prescribe the type of lenses needed.

- Employees must secure an official form from the Health Center to obtain glasses or services from authorized supplier. This form should be secured prior to a refractive examination to allow a vision specialist to enter required data to make the glasses.

- Replacement of prescription lenses due to vision changes will be limited to once every two years. Work damaged lenses and frames will be replaced as needed.

Head Protection

- ANSI Z89.1 - 2003, Type 1, Class G approved protective helmets are to be worn as minimum head protection.

- Each employee will be furnished a protective helmet by the company.

- The employee must make sure the fit is proper and the suspension should be inspected before use.

- Protective helmets can be equipped with chin strap and/or fire retardant winter liner.

- Hard hats must be worn with the bill forward unless under a welding helmet.

- Employees working on electrical equipment must wear a protective helmet designed to reduce electrical shock hazards (ANSI Z89.1 - 2003, Type 1,

Class E).

- Inspect your protective helmet for any damage (cracks, dents etc.) and replace if damaged or following a significant impact. It is recommended to replace the suspension annually and the shell every 5 years.
- The BP Safety Department will approve hard hat styles for use at the Toledo Refinery.

Hand Protection

- Gloves shall be worn when performing work. Gloves shall also be worn when there is a potential for hand injury, such as climbing ladders, closing toolboxes, picking up trash, etc. People are encouraged to carry gloves with them any time they wear standard PPE.
- Gloves should be selected on the basis of the material being handled, the particular hazard involved, and their suitability for the operation being conducted. One type of glove will not work in all situations. For general work, the minimum specification is a cotton general duty work glove to protect the hand from cuts. All employees, contractors, and visitors are required to select and wear the proper gloves for the types of hazards expected in performing a task.
- It is acceptable to work without gloves on jobs requiring a greater amount of dexterity than a gloved hand. However a pre-task risk assessment must be completed prior to beginning work.
- Some examples of specialized protective gloves are:
 - Insulated Winter
 - Chemical Protective
 - Thermal Protective
 - Abrasion Resistant
 - Fire Fighting
- Gloves may create a hazard when worn around revolving tools or machinery. The pre-task risk assessment should consider whether gloves are appropriate.

Foot Protection

- A good grade of work boot or shoe is the minimum standard.
- Footwear shall have an off-set heel. This helps prevent slipping when climbing ladders.
- Starting October 1, 2010, footwear shall have a protective safety-toe (such as steel toed or non-metallic toe cap) meeting the requirements of ASTM F2413-05. Additionally reinforced insoles/soles to prevent puncture hazards are recommended.

- When working near electrical equipment, non-conductive footwear or overshoes should be worn.
- Wear chemical protective foot protection when working with chemicals.

Unacceptable footwear includes:-

- Athletic style shoes, flat soled shoes without an offset heel, open toed shoes, crepe soled shoes, tennis shoes, sneakers, canvas type shoes, sandals, high heeled shoes, clogs or shoes with metal taps are unacceptable in any Process, Maintenance, Warehouse, Laboratory or Tank Field area.
- Safety shoes need to be replaced when they lose their effectiveness.

Hearing Protection

- Hearing protection shall be worn where minimum PPE is required (outside of the green zone). This includes all operating plant areas and along the roadways adjacent to operating units.
- North, East and West tank fields, Marine Dock, Water Intake, Decanted Oil Truck Loading Rack, Decanted Oil Railcar Loading Rack, Asphalt Loading Rack, LPG Loading Rack, Blender, and WWTU are exempt from the hearing protection requirements except as noted with signage or as directed by Area Operations personnel.
- Hearing protection variance may be allowed when process units are shutdown during TAR, with Asset Superintendent, TAR Superintendent and Area Safety Advisor approval.
- The minimum standard for hearing protection devices allowed for general use within Toledo Refinery shall provide an attenuation of 24 dB Noise Reduction Rating (NRR) as determined in compliance with 40 CFR Part 211, Subpart B.
- See SAF-081 Hearing Protection for more information on hearing protection devices.

Respiratory Protection

- Respiratory protection, air-purifying or supplied air, may be required by the pre-task risk assessment. This will be communicated by the WCC.
- Respiratory protection may be required at any time for operators or other personnel depending upon the state of refinery operations. Emergencies or other process upsets may require the use of air-purifying or supplied air respirators for unit response and/or evacuation.
- Respiratory protection shall be selected, used, and maintained in accordance with BP Toledo Refinery Respiratory Protection Program.

5.0 Building Specific PPE The following buildings within the Green Zone have specific PPE requirements

as detailed below:

Warehouse

Compliance with the Foot Protection referenced in 4.0 is required in the Warehouse. Safety glasses with side shields are required in the Warehouse (excluding the office areas and in the area of the Storekeepers' computer stations). FRC and hardhats are not required.

Laboratory

Standard Laboratory PPE includes: Nomex long-sleeved outer wear (i.e., coveralls or lab coats or pants & shirt), footwear, and safety glasses w/sideshields. A conventional or athletic style all leather flat sole shoe is acceptable inside the lab. Starting October 1, 2010, footwear must have a protective safety-toe (such as steel toed or non-metallic toe cap) meeting the requirements of ASTM F2413-05. Additional PPE may be required for specialized tasks or by procedures and include: splash shields/goggles, aprons, gloves and earplugs.

Breakrooms and offices in the laboratory are green zones, no PPE required.

Maintenance Workshops

Compliance with the Foot Protection referenced in 4.0 is required in the Workshops (excluding the office areas). Safety glasses with side shields are required outside of the painted walkways. FRC and hardhats are job specific requirements determined in the pre-task risk assessment.

6.0 Training

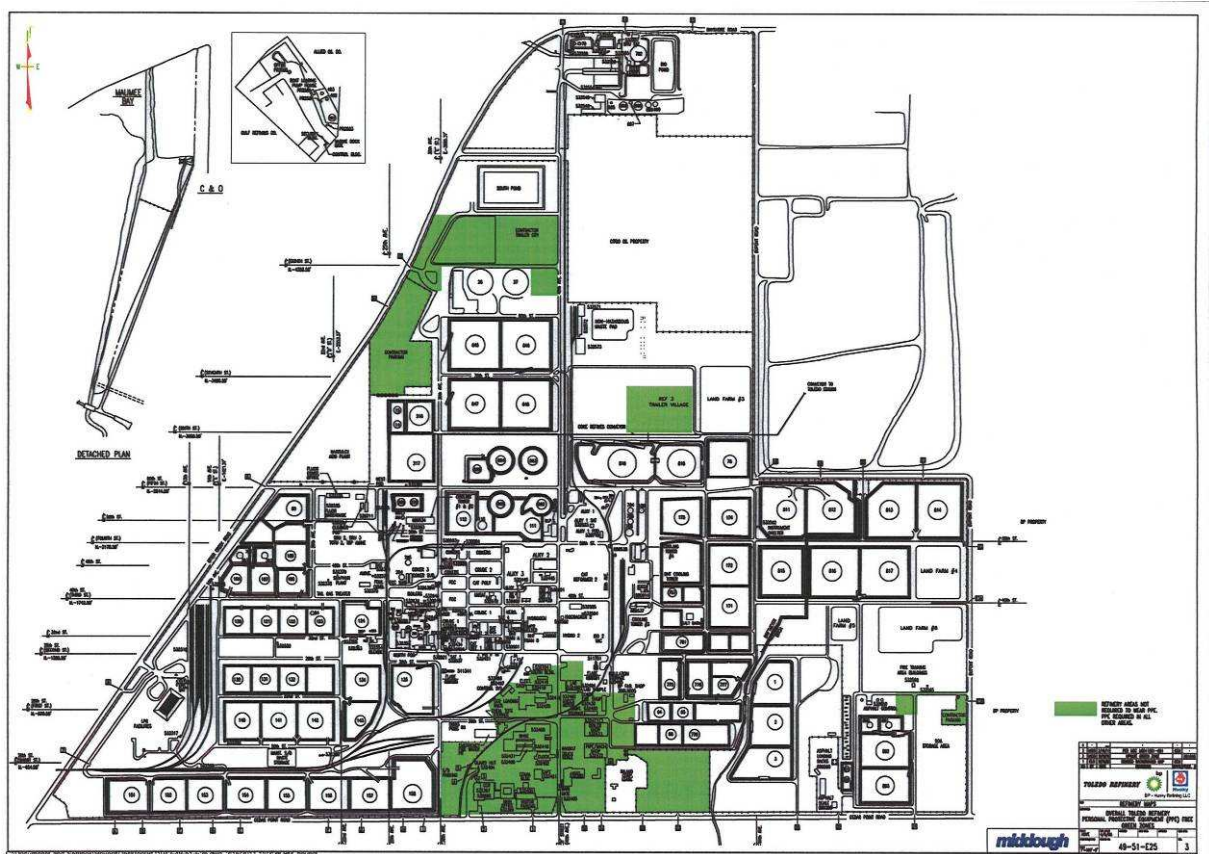
- Each employee who is required to wear PPE under this procedure shall receive training in the following:
 - When PPE is necessary
 - What PPE is necessary
 - How to properly put on, take off, adjust, and wear PPE
 - The limitations of the PPE
 - The proper care, maintenance, useful life and disposal of PPE
- Re-training shall be given when:
 - Changes in the workplace make the previous training obsolete
 - Changes in the type of PPE used makes the previous training obsolete
 - Inadequacies in the employee's knowledge or use of PPE indicate that the employee has not retained the requisite understanding or skill.

7.0 Audit

- Each employee, contractor and visitor is responsible for compliance with this procedure.
- BP employees are responsible for informing visitors of PPE requirement

8.0 Changes

- Any changes or deviations from this procedure must go through the Management of Change (MOC) process and should include approval by a member of the safety department.



Map: 49-51-E25

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