

**TAMPA ELECTRIC COMPANY
ENERGY SUPPLY
PERSONAL PROTECTIVE EQUIPMENT PROGRAM**

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OSHA - GENERAL REQUIREMENTS (PPE) (29 CFR 1910.132)

OSHA - EYE AND FACE PROTECTION (29 CFR 1910.133)

OSHA - HEAD PROTECTION (29 CFR 1910.135)

OSHA - OCCUPATIONAL FOOT PROTECTION (29 CFR 1910.136)

OSHA - HAND PROTECTION (29 CFR 1910.138)

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PURPOSE

The purpose of this program is to protect human life and prevent injuries by establishing a system of hazard assessment, personal protective equipment selection and use, and employee training. This program applies to Personal Protective Equipment (PPE) used in Tampa Electric Energy Supply, with the exception of Fall Protection (which is covered in the [Tampa Electric Energy Supply Fall Protection Program](#)), Hearing Protection (which is covered in the [Tampa Electric Energy Supply Hearing Conservation Program](#)), and Respiratory Protection (which is covered in the [Tampa Electric Energy Supply Respiratory Protection Program](#)).

INTRODUCTION

Tampa Electric provides a safe workplace for its employees. This program outlines employee education and training as well as requirements for the appropriate selection and use of personal protective equipment.

- Procedure for selection of personal protective equipment based on potential hazards as identified during hazard assessment.
- Employee education and training program related to use of personal protective equipment.

RESPONSIBILITY

Each Station Director is responsible for the implementation and maintenance of the Personal Protective Equipment Program.

The Joint Departmental Committee Safety Programs is responsible for reviewing, maintaining and revising this program as necessary. Responsibilities supporting this objective may be assigned to others as designated.

All Personnel (employees, contractors, and visitors) are responsible for using personal protective equipment according to the designed purpose and within the requirements of this program. Prior to use, every individual shall inspect all PPE and dispose of damaged or defective PPE according to station policies.

EMPLOYEE TRAINING

Target Audience - Tampa Electric, Energy Supply employees and other Tampa Electric employees that may perform work in Energy Supply facilities.

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Frequency – Initial training shall be provided to each affected employee prior to the assignment of tasks requiring the use of personal protective equipment.

Retraining shall be conducted whenever new hazards are introduced at the plant or when an employee demonstrates lack of understanding of the proper use of personal protective equipment.

Methods – Training shall be accomplished through Computer-Based Training (CBT), by PowerPoint presentation with video, or other training materials determined adequate by the Safety Department.

The employer shall provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

- When PPE is necessary
- What PPE is necessary
- How to properly don, doff, adjust, and wear PPE
- The limitations of the PPE
- The proper care, maintenance, storage, useful life and disposal of the PPE
- Where to obtain required PPE

Documentation – All training will be documented electronically in Cority. Classroom training will require the attendees to sign a roster and that information will later be transferred into Cority. When Computer Based Training is used, the training may be documented in the separate CBT program database or transferred into Cority, where practical.

METHODS OF CONTROL

When a potential hazard is identified, use of engineering controls designed to eliminate / reduce hazards will be implemented, if feasible. If this is not possible, isolation of the process or guarding of the potential hazard will be considered. Personal protective equipment will be used if other controls are not feasible.

SELECTION AND USE

Eye and Face Protection

The plant shall require that all affected personnel use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. The following selection chart may be utilized to assist with protection determination.

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EYE AND FACE PROTECTION SELECTION CHART		
Source	Assessment of Hazard	Protection
Impact (i.e.: chipping, grinding, machining, drilling, chiseling, riveting, sanding, sand blasting)	Flying fragments, objects, large chips, particles, sand, dirt, etc...	Goggles, sproggles or safety glasses with side shields combined with a face shield. <i>Note: Goggles should be impact resistant type.</i>
Water Blasting	Flying fragments, high pressure water, hot water, chemicals	Goggles combined with a face shield. <i>Note: Choose chemical splash goggles for chemical exposures.</i>
Chemicals (i.e.: handling of acid, caustic or other chemicals)	Splash Irritating mists	Chemical splash goggles. For corrosive/heat exposure, use face shield over primary eye protection Special-purpose goggles for mist or full-face respirator.
Dust (i.e.: hand woodworking, buffing, general dusty and/or windy conditions)	Nuisance dust	Goggles or sproggles.
Light and/or Radiation Welding - electric arc & gas Torch cutting, torch brazing, torch soldering	Optical radiation, sparks	See the Filter Lens Requirements below for appropriate lens filter shade.

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Selection of welding, cutting and brazing eye protection shall be made using the following filter lens requirement table.

Table 1: Filter Lenses for Protection during Shielded Metal Arc Welding

Operation	Electrode Size – inch (mm)	Arc Current (Amperes)	OSHA Minimum Protective Shade Number	ANSI & AWS Shade Number Recommendations*
Shielded Metal Arc Welding (SMAW)	Less than 3/32 (2.4)	Fewer than 60	7	-
	3/32-5/32 (2.4-4.0)	60-160	8	10
	More than 5/32-1/4 (4.0-6.4)	More than 160-250	10	12
	More than 1/4 (6.4)	More than 250-550	11	14

Table 2: Filter Lenses for Gas Welding and Oxygen Cutting Operations

Operation	Plate Thickness Inches	Plate Thickness mm	OSHA Minimum Protective Shade Number	ANSI & AWS Shade Number Recommendations*
Gas Welding	Under 1/8	Under 3.2	4	5
	1/4 to 1/2	3.2 to 12.7	5	6
	Over 1/2	Over 12.7	6	8
Oxygen Cutting	Under 1	Under 25	3	4
	1 to 6	25 to 150	4	5
	Over 6	Over 150	5	6

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Table 3: Filter Lenses for Protection during Other Welding and Cutting Operations

Operation	Arc Current (Amperes)	OSHA Minimum Protective Shade Number	ANSI & AWS Shade Number Recommendations*
Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)	Fewer than 60	7	-
	60-160	10	11
	More than 160-250	10	12
	More than 250-500	10	14
Gas Tungsten Arc Welding (GTAW)	Fewer than 50	8	10
	50-150	8	12
	More than 150-500	10	14
Air Carbon Arc Cutting (CAC-A) (Light)	Fewer than 500	10	12
Air Carbon Arc Cutting (CAC-A) (Heavy)	500-1000	11	14
Plasma Arc Welding (PAW)	Fewer than 20	6	6-8
	20-100	8	10
	More than 100-400	10	12
	More than 400-800	11	14
Plasma Arc Cutting (PAC) (Light)**	Fewer than 300	8	9
Plasma Arc Cutting (PAC) (Medium)**	300-400	9	12
Plasma Arc Cutting (PAC) (Heavy)**	More than 400-800	10	14
Torch Brazing (TB)		3	3 or 4
Torch Soldering (TS)		2	2
Carbon Arc Welding (CAW)		14	14

* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then, go to a lighter shade which gives a sufficient view of the weld zone without going below the minimum. During oxygen gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light (spectrum) of the operation.

** Values apply where the actual arc is clearly seen. Lighter filters may be used when the arc is hidden by the workpiece.

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FILTER LENS REQUIREMENTS TABLE	
Operation	Shade No.
Soldering	2
Boiler Inspection Ports	3
Light Cutting (up to 1 inch)	3 or 4
Medium Cutting (1 to 6 inches)	4 or 5
Heavy Cutting (Over 6 inches)	5 or 6
Light Gas Welding (up to 1/8 inch)	4 or 5
Medium Gas Welding (1/8 to 1/2 inch)	5 or 6
Heavy Gas Welding (over 12 inch)	6 or 8
Shielded Metal-Arc Welding (1/8 to 5/32-inch electrodes)	10
Inert-Gas Metal-Arc Welding (non-ferrous) (1/16 to 5/32-inch electrodes)	11
Shielded Metal-Arc Welding	
3/16 to 1/2-inch electrodes	12
3/16 to 3/8-inch electrodes	14
Atomic Hydrogen Welding	10 to 14
Carbon Arc Welding	14

- Employees requiring corrective lenses shall be provided prescription safety glasses through an approved eyewear safety supplier.
- Only approved eye protection (meeting ANSI Z-87.1) that is in good condition shall be worn. At a minimum, impact resistant safety glasses with attached or design engineered side shields are required. Additional or specialized eye protection shall be worn as required by the specific job and associated hazards.
- Eye protective equipment shall be worn in Process Areas (all areas associated with Power Generating activities), Shops, and all areas where potential for an eye exposure exists. Safety glasses shall always be worn while conducting work in a Lab.
- Contact lenses do not provide any form of eye protection. Contact lens wearers may choose to wear their contact lenses, but they must also wear the appropriate level of protection for the task being performed.
- Dark-tinted lenses shall not be worn indoors, unless they are being used for welding, cutting, or brazing operations where required as protection against radiant energy, or unless being worn for a medical condition and prescribed by a doctor.
- Personnel wearing photo chromatic (self-darkening) lenses shall allow enough time for the lenses to lighten when traveling from sunlight to darker indoor environments.

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Foot Protection

All affected personnel shall use proper footwear when entering / working in process areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where there is exposure to electrical hazards.

Visitors on a tour route may not be required to wear safety shoes, however they are required to wear, at a minimum, closed toed, closed back, non-heeled shoes (maximum 1" heel).

Only approved foot protection meeting ANSI Z-41.1, Class 75 that are in good condition shall be worn:

- At a minimum, boots or shoes with impact-resistant toecaps and non-slip soles are required for anyone entering a process area.
- Where identified, additional foot protection shall be worn.
- When welding and/or cutting, high-top (minimum 6") shoes or boots that are covered by pant legs shall be worn.

Hand Protection

All affected personnel shall use proper hand protection when hands are exposed to potential hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

The selection of the appropriate hand protection shall be based on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

- Special gloves approved for use in handling acids, caustics or other potentially hazardous substances shall be worn when working with these materials.
- Snug fitting gloves should be worn where there is danger of the glove being caught in moving machinery or rotating parts.
- Approved thermal insulating gloves shall be used for temperature extremes, both cold and hot.
- Di-electric Rubber Gloves (See Electrical Safety Program)

Head Protection

All affected personnel shall wear a protective hard hat when entering / working in process areas where there is a potential for injury to the head from falling objects, or from the employee bumping his / her head.

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Only approved hard hats (meeting ANSI Z -89. 1) with standard reflective decals shall be worn.

Hard hats shall be kept clean and regularly inspected. Those found to be defective shall be replaced.

Hard hats shall always be worn in the forward position, except when facial protection is required which fits on the hard hat in a backward position.

Nothing may be worn under hard hats except a welder's skull cap, do-rag or other safety-related items designed specifically to be worn under a hard hat.

Hardhats must be replaced as needed, and, at a minimum, every 5 years.

Hardhats suspensions must be replaced as needed, and, at a minimum, every year.

Protective Clothing

All affected personnel shall wear appropriate protective clothing when required. Selection of protective clothing shall be made considering the potential hazard for which it is used.

Employees engaged in activities where there is danger of injury to the arms such as cuts, abrasions, or thermal burns shall wear a long sleeve shirt buttoned and/or pulled down to the wrist. Hot Work shall not be performed in synthetic (Tyvek, Kimberly Clark, Paper, etc.) coveralls.

Where there is exposure to flames, electric shock or arc flash hazards, affected employees shall wear approved apparel. Clothing made from the following types of fabrics, either alone or in blends, is prohibited: acetate, nylon, polyester, rayon, and silk.

At a minimum, all individuals entering process areas, including tour routes, shall wear sleeved shirts/blouses (no tank or tube tops) and long pants (no skirts, shorts or Capri pants).

High Visibility clothing shall be worn in designated areas as specified at each station. Hot work is prohibited when wearing High Visibility clothing unless specifically designated as Fire-Resistant.

The need for High Visibility Clothing shall be assessed for work in Temporary work areas and construction areas.

Loose dangling jewelry or flapping clothing, ID lanyard, and unbuttoned cuffs, shall not be worn when working around moving machinery or rotating parts.

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Personal Flotation Devices

Whenever it is necessary to work in a location where there is a possibility of falling into water or where there is a risk of drowning and or submersion, employees shall wear US Coast Guard approved personal flotation devices (PFD). Where a handrail or other mechanisms are providing a protective barrier, a PFD is not required.

PFDs are required at all times when traversing, working or operating on a floating platform or vessel.

Where a PFD is not applicable because it presents a greater hazard, additional protections and barriers shall be implemented to ensure the employee cannot fall into the water or can be immediately retrieved from the water and / or thrown a life ring for floatation.

Chemical Protective PPE

All affected personnel shall wear appropriate PPE for exposure to chemicals - Refer to the manufacturer's SDS for appropriate PPE. The following table can provide specific precautions required according to the chemicals listed.

Minimum PPE includes hard hat, safety glasses with side shields, steel-toed shoes, long pants, and a short-sleeved shirt.

Exposure	Face/eye Protection	Gloves	Clothing	Respirator
Ammonia	Face shield and goggles or full face respirator	Neoprene or Rubber	Full Suit	Air purifying MG cartridge (3M 60926 or Scott 7422SD1)
Caustic	Face shield and goggles	Minimum elbow length, acid resistant, PVC or Neoprene (8 hours)	Full suit, acid resistant	Air purifying respirator with MG (3M 60926) cartridge
Fyrquel	Face shield and goggles	Rubber	Tyvek coveralls	Air purifying respirator with OV/AG (3M 60923) cartridge

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Exposure	Face/eye Protection	Gloves	Clothing	Respirator
Gypsum Slurry	Face shield and goggles	Rubber	Tyvek coveralls	Not required
Hydrazine or Cortrol OS 5005	Face shield and goggles	Neoprene, nitrile, PVC	Full suit, neoprene, nitrile, PVC	Not required
Hydrogen	Face shield and safety glasses	Leather	FR suit/coveralls	Not required
MDEA	Face shield and goggles	Nitrile	Rainsuit or tyvek coverall	Not required
Nitrogen (gaseous)	Minimum	Leather	Minimum	Not normally required. When large volumes of gas are anticipated use SCBA or SAR
Petroleum Products	Face shield and goggles	Nitrile or PVC	Flammables: FR shirt/jacket, PVC or nitrile apron Combustibles: Tyvek or acid (PVC) suit	Flammables: Air purifying respirator with MG (3M 60926) cartridge Combustibles: None required
Sodium Hypochlorite (Bleach)	Face shield and goggles	Nitrile, Neoprene, PVC	Rainsuit or tyvek coveralls	Air purifying respirator with MG (3M 60926) cartridge
Steamate NA 1324	Face shield and goggles	Neoprene, Nitrile, PVC	Full Suit – neoprene, nitrile, PVC	Air purifying respirator with MG (3M 60926) cartridge
Sulfuric Acid	Face shield and goggles	Minimum elbow length, acid resistant (PVC, Nitrile)	Full suit, acid resistant	Air purifying respirator with MG (3M 60926) cartridge.

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DOCUMENTATION AND RECORDKEEPING

Required PPE shall be documented on Job Safety Briefing forms and maintained in accordance with Station policies.

PERIODIC PROGRAM EVALUATION

The Energy Supply Joint Departmental Committee (Programs) is responsible for periodically performing evaluations of the elements outlined in this document so that the effectiveness of the program may be maintained. Responsibilities supporting this objective may be assigned to others as designated.

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APPENDIX A - GLOSSARY

ANSI - The American National Standards Institute (ANSI) is a private, non-profit organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system.

ASTM - The **American Society for Testing and Materials (ASTM)** is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

Degradation - The wearing down of the material's physical properties, such as its resistance to cuts or punctures.

Don - to put on the body

DoFF - to remove from the body

Goggles and/or Sproggles – Specially designed eyewear that forms a seal against your skin to provide added protection to the eyes against dusts, flying particles, and splashing liquid. Goggles may have one large lens that covers both eyes with a sealing surface that contacts the perimeter of both eyes, or two lenses and a sealing surface around each individual eye.

Penetration - The ability of the material to prevent chemicals from seeping through pores, stitches or other openings.

Permeability - The ability to prevent chemicals from entering at a molecular level.