

<b>PPPL</b>	PRINCETON PLASMA PHYSICS LABORATORY	<b>PROCEDURE</b>		No. ESH-002 Rev 5 page 1 of 3
		<b>Subject:</b> Facility Safety Signs and Barricade Tapes	<b>Effective Date:</b> <b>November 4, 2015</b>	<b>Initiated by:</b> Head, Environment Safety & Health
		<b>Supersedes:</b> Rev. 4, Dated 2/4/10 and TCR-001	<b>Approved:</b>  Director	

**Management System (Primary):** 09.00 - ESH and Integrated Safety Management (ESH)  
**Management System Owner:** Head, ES&H  
**Management Process:** 09.07 ES&H – Occupational Safety, Health and Medicine  
**Process Owner:** Head, ES&H  
**Sub-Process:** 09.07.05 - Signage  
**Sub-Process Owner:** Head, ES&H  
**Subject Matter Experts (SMEs):** Head, Safety; Head, ES&H

**Applicability**

This procedure is applicable to PPPL Sites and Facilities where a visual system of identification related to potential hazards and important information can be addressed.

**Exclusions**

This procedure does not cover radiological posting and labeling, (see ESHD 5008 – Section 10), equipment operational procedures, or operator aids.

**Introduction**

There are five types of safety signs and two types of barricade tape used at PPPL.

Danger, Warning, Caution, Notice, and General Safety signs are the standard OSHA and ANSI Safety Signs that are covered in this procedure. They are used to:

- Notify personnel of credible imminently hazardous or potentially hazardous situations.
- To alert personnel against unsafe practices.
- To reflect Lab policy as it relates to the safety of personnel or the protection of property.

Danger and Caution barricade tapes or chains are used to alert personnel to temporary, immediate or potential hazards.

There may be circumstances where the distinction between types of signs or barricade tapes/chains may be subtle or a manufacturer may provide products labeled differently than the conventions described herein. In these cases, a determination of acceptable sign and barricade tape/chain type will be made by the Construction Branch Head and concurred with by the Head of ES&H with consultation from Subject Matter Experts.

**Definitions**

<u>Affected Worker</u>	PPPL employee or subcontractor who observes the sign/tape and implements action to avoid hazards.
<u>Authorized Employee</u>	A qualified employee, under the direction of the Cognizant person, who will place the sign or tape on the system.
<u>Barricade Tape Or Chain</u>	A visual aid that alerts personnel to the presence of a temporary, immediate or potential hazard.
<u>CAUTION</u>	A signal word that indicates a possible hazard against which proper precautions should be taken
<u>Cognizant Person</u>	An engineer, technician, or other individual who has primary responsibility for the system.
<u>DANGER</u>	A signal word that indicates an immediate danger and that special precautions are necessary.
<u>Message Panel</u>	The lower panel on a sign that identifies the hazard and avoidance of the hazard. (See illustrated examples).
<u>NOTICE</u>	A signal word to indicate a PPPL policy and/or general information.
<u>SAFETY</u>	A signal word to indicate general safety information.
<u>Safety Signs</u>	A visual sign, label, or placard to alert personnel to the hazards associated with non compliance. Also identifies informative directions and safety precautions.
<u>Signal Word</u>	The upper panel on a sign to alert personnel to the level of severity. (See illustrated examples).
<u>WARNING</u>	A signal word to identify a potential hazard and that avoidance shall be taken.

**Reference Documents**

OSHA 29CFR1910.145, Specifications for Accident Prevention Signs and Tags  
ANSI Z535.1, Safety Color Code  
ANSI Z535.2, Environmental and Facility Safety Signs  
ANSI Z535.3, Criteria for Safety Symbols  
ANSI Z535.5, Safety Tags and Barricade Tapes (for Temporary Hazards)

**Procedure**

**Responsibility**

**Action**

Cognizant Person

1. Determines, either by inspection, Job Hazard Analysis (JHA), or the advice from a review, that an area, system, component or equipment under his /her jurisdiction requires a safety sign or barricade tape/chain.
2. Obtains correct safety sign or barricade tape/chain (e.g., from the stockroom or ES&H Department) based on the illustrated examples including signal word and message panel with hazard identification, avoidance procedure and/or consequence.

Authorized Employee

3. At the direction of the cognizant person places the safety sign or barricade tape/chain on the system, component, equipment or access point. Affixes contact information (name and phone number) of the authorized employee and/or cognizant person to the barricade tape/chain.

Affected Worker

4. Reads safety sign or barricade tape/chain and implements appropriate action.

Authorized Employee

5. Removes safety sign or barricade tape/chain when the cognizant person determines that they are no longer required.

**Training**

Head of Safety

1. Obtains concurrence of the Management System Owner and ensures the following training is provided. A. Target Audience:

**Supervisors**

Instructor: **Head, Best Practices and QA**

Training Method: Read only email distribution

Frequency: All revisions of this procedure

- B. Target Audience: **Affected staff**

Instructor: **Supervisors**

Training Method: Brief their staff members and/or notify them to read this procedure

Frequency: All revisions of this procedure

**Records Requirements Specific To This Procedure**

Not Applicable – There are no records retention requirements related to this Procedure.

**Attachments**

1. General Requirements for Safety Signs and Barricade Tapes
2. Specific Barricade Tapes Requirements
3. Illustrations

**General Requirements for Safety Signs and Barricade Tapes****page 1 of 1**

- PPPL Safety Signs shall be posted, where possible, centered at 60 inches from grade, but no lower than 36 inches from the bottom of the sign and no higher than 120 inches to the top of the sign from grade
- Message Panels for DANGER, WARNING, and CAUTION shall state the hazard and avoidance procedure and/or consequence of non-compliance. NOTICE and SAFETY message panels shall state PPPL's general and safety information.
- PPPL barricade tapes/chains shall be posted, if possible at 36 inches from grade.
- DANGER barricade tape or chain is to be used for protection of people against hazards.
- CAUTION barricade tape or chain is to be used for protection of equipment against hazards.
- Barricade tapes and chains shall not be breached, unless granted permission by the cognizant person in charge of the area or the authorized employee who placed the tape.
- In an emergency, barricade tape/chain placed on an exit door can be crossed to escape the area. An exit taped or chained in this way should be marked "Emergency Exit Only". If the exit is physically blocked, an alternative emergency exit has to be designated and the people in the area informed, or the affected area cannot be occupied.
- In the event that the applicability of a sign or barricade tape/chain is questioned, the concern shall be brought to the attention of the cognizant person or authorized employee who placed the sign/barricade tape or chain. In the event that the identity of this individual is unknown, it shall be brought to the attention of the Head of ES&H, who has the authority to make any necessary changes.
- Safety signs and barricade tapes/chains shall be so placed to alert and inform the viewer in sufficient time to take appropriate evasive actions to avoid the potential harm from the hazard. The safe distance is to be determined by the cognizant person. Prior to placing barricade tapes/chains, consideration must be given as to what other alternate egress or detours exist
- Safety signs and barricade tapes/chains shall be placed so that they are legible, non-distracting, and not hazardous in themselves. Proper consideration should be given to environmental conditions and their deteriorating effects.
- Safety signs and barricade tapes/chains shall not be located in areas where they may be moved or rendered ineffective by equipment movement, air currents, etc, nor shall they be blocked by movable panels such as doors, windows, racks, gates, etc.

**Barricade Tapes/Chains, “DANGER” and “CAUTION”**

Barricade tapes and chains are typically used for short term work and construction or when a hazard must be avoided.

All barricade tapes and chains must contain a Signal Word and a Message Panel.

Signal Word  
DANGER  
CAUTION

Message Panel  
DO NOT ENTER  
KEEP OUT

Note: Custom worded barricade tapes and chains are acceptable for a special application provided they have a Signal Word and Message Panel.

Installed barricade tapes and chains shall also include the name and phone number of the cognizant person and/or authorized employee. It is the responsibility of the authorized employee to remove the tapes and chains when the cognizant person determines that it is no longer required.

**Code Signage Requirements (Not inclusive)**

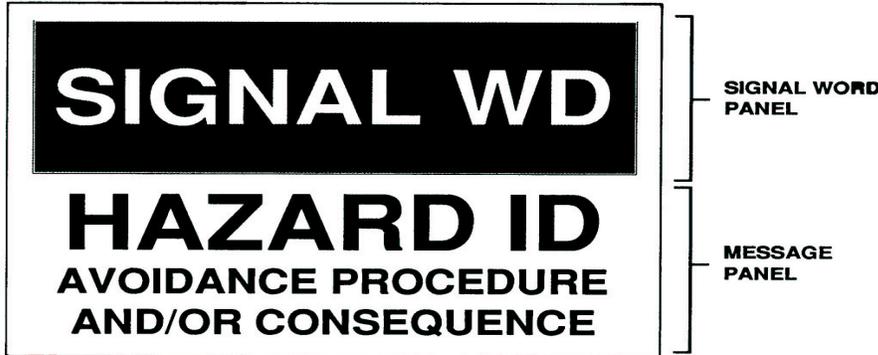
- National Electrical Code Article 110.34(C) – At the entrances to all buildings, vaults, rooms, or enclosures where the voltage exceeds 600 volts (nominal), permanent and conspicuous warning signs shall be provided, reading as follows:

DANGER – HIGH VOLTAGE – KEEP OUT

- National Electrical Code Article 110.16 – Switchboards, panelboards, industrial control centers, meter socket enclosures, and motor control centers shall be marked to warn qualified persons of potential Arc Flash Hazards. PPPL has adopted the following warning label:

WARNING – ARC FLASH HAZARD & ELECTRIC SHOCK HAZARD

Illustrated Examples



	<p><b>IMMEDIATE HAZARD</b> – Special precautions are necessary!</p> <p>Ex. <i>HIGH VOLTAGE – KEEP OUT</i> <i>FUEL STORAGE – NO SMOKING</i></p> <p><b>DANGER</b> signal word panel- white letters on a safety red background, safety red exclamation mark. <b>Message panel</b> shall be black or red letters with a white background.</p>
	<p><b>POTENTIAL HAZARD</b> – Avoidance shall be taken!</p> <p>Ex. <i>AUTHORIZED PERSONNEL ONLY</i> <i>TESTING IN PROGRESS – KEEP OUT</i></p> <p><b>WARNING</b> signal word panel-black letters on safety orange, safety orange exclamation mark. <b>Message panel</b> shall be black letters on an orange background.</p>
	<p><b>POSSIBLE HAZARD</b> –Proper precautions should be taken!</p> <p>Ex. <i>CRANE OPERATIONS-HARDHAT REQUIRED</i> <i>CONSTRUCTION AREA-AUTHORIZED ONLY</i></p> <p><b>CAUTION</b> signal word panel- black letters on a safety yellow background, safety yellow exclamation mark. <b>Message panel</b> shall be black letters on a yellow background.</p>

**NOTICE**

**GENERAL INFORMATION – To avoid confusion.**

Ex. *KEEP AREA CLEAR AT ALL TIMES*  
*ELEVATOR NOT IN SERVICE*

NOTICE signal word panel- white letters on a blue background.  
Message panel shall have black letters on a white background.

**SAFETY**

**SAFETY INFORMATION – First Aid, medical, health, housekeeping, sanitation, and general safety.**

Ex. *SAFETY SHOWER AND EYE WASH*  
*BE CAREFUL – KEEP FLOORS CLEAN*

SAFETY signal word panel- white letters on a green background.  
Message panel shall have black letters on a white background.