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<b>Approved By:</b> Safety Supervisor		<b>Health Safety Standard</b>
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## HSS 027 Barricades

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**Purpose**                      The purpose of this document is to prevent personal injury and equipment damage by providing guidelines for recognizing and identifying barricades that restrict access and/or provide warning for areas that involve construction activity, contain safety hazards, abnormal conditions, or in which unusual operations are being performed.

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**Scope**                      The scope of this document is all employees and contractors who work at the Los Angeles Refinery (LAR).

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**Record Retention**                      Printed copies of this document should not be retained more than 12 months. Any revision to this document will be retained a maximum of 10 years following the revision.

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**Supersedes**                      This document supersedes FS 720 and is applicable across the Los Angeles Refinery.

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## 1.0 References

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### 1.1 Refining References

The table below lists the Refining references used with this document.

Number	Description
HSS-215	Confined Space
HSS-408	Safe Use of Nitrogen
HSS-409	LAR Benzene Procedure
HSS-410	LAR Asbestos Procedure
HSS-414	Lead Exposure Prevention Program
HSS-612	Excavations, Trenching and Shoring
FS 720	Roadblocks
HSS-302	Radiation Protection
PSM007	Exclusion Zone for Operating Units During Start up and Shutdown activities.
RSP-1162	Electrical Safety

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### 1.2 Regulatory References

The table below lists the regulatory references used with this document.

Number	Description
Title 8	California Code of Regulations Sections 3273,5157, 1671.2

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### 1.3 Terms

The following terms are used in this document:

- 1.3.1 [Barricade](#)
- 1.3.2 [Barricade Tag](#)
- 1.3.3 [Controlled Access Zone](#)

**Reference:** For details, see [Appendix A: Terms and Definitions](#).

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## 2.0 Roles and Responsibilities

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### 2.1 Roles and Responsibilities

The table below describes the roles and responsibilities related to this document.

<b>Roles</b>	<b>Responsibilities</b>
All	Responsibility for barricading the area and removing the barricade when the hazard no longer exists rests with the group creating the hazard. Anyone entering a barricaded area must understand and abide by the conditions of the barricade.
Maintenance	Marathon and Contract maintenance should discuss and establish barricade requirements with the Owning Department during the work permitting process.
Confined Space Safety Attendants	Once directed by the Owning Department, will replace barricade tape and signage at vessel openings when entrants have left the vessel and there is no longer an attendant in place (i.e. breaks, end of shift, etc.)

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### 3.0 Procedures

When barricades are used to prevent dropped objects or for any other purpose, the following requirements must be followed:

#### 3.1 Barricade Placement

- 3.1.1 Barricades shall be erected and tagged prior to the actual beginning of work to avoid leaving an unprotected hazard. All groups working inside a barricade are responsible for its orderliness/housekeeping.
- 3.1.2 Barricade tape should be placed between 36 inches and 42 inches high. A double row of barricade tape is recommended for radiation being done in a congested area; a single row is acceptable to communicate other hazards.
- 3.1.3 Barricade tape should be tied to stanchions but may be tied to substantial building parts. Do not tie barricade tape to instrument lines, control valves, etc.
- 3.1.4 Nylon barricade tape is not allowed at LAR. Vinyl tape may be used.
- 3.1.5 When barricaded areas contact buildings, consideration must be given to address doorways that open into the barricaded area and if the area should encompass the building.
- 3.1.6 Completed barricade tags are required on barricade tape. The tags, updated daily, must contain information on who established the boundary and for what reason. They should be placed at entry points. Use more than one tag on large boundaries.  
  
**Exception:** Long term barricades placed outside unit boundaries are not required to be updated daily, but at least every 30 days. The tags must be filled out, including the estimated end time of the barricade.
- 3.1.7 Barricades must be readily visible at night when located along roadways. At night this can be achieved by the use of flashing lights, reflectors, reflected tape, cones.
- 3.1.8 For areas with multiple restrictions consider a dual barrier system. For example, an outer barrier of “Danger” tape restricts general access while an inner “Fresh Air Required” barrier is raised and lowered as applicable. This ensures consistent observance and protection while avoiding confusion.

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- 3.1.9 Consideration should be given to barricading above or below the hazard area as needed for the work. Example: for breathing air jobs, any platforms above the work area must also be barricaded. Barricades may be necessary for decks below the work location to account for falling objects.
- 3.1.10 Barricade placement should be discussed and established as part of the work permit and JSA process.

**3.2 Entering A Barricaded Area**

- 3.2.1 Entry into barricaded areas must only be done when no hazard exists, and the needed approvals have been obtained (see specific guidance in Appendix A Item A.3)
- 3.2.2 Climbing over or through hard barricades is prohibited. If access is required, a swing gate or opening shall be provided in the barricade.
- 3.2.3 Do not climb over barricade tape.

**3.3 Barricade Removal**

- 3.3.1 Barricades shall be removed by the group completing the work as soon as it is safe to do so.
- 3.3.2 Barricades are to be removed only with the permission of the person in charge of the work.  
  
**Note:** The Health Department must be contacted prior to removing benzene tape.
- 3.3.3 Conditions requiring barricades include but are not limited to the following examples.

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**3.4 Conditions Requiring Barricades**

- 3.4.1 **Leaks or spills:** Areas where hazardous materials are leaking or have spilled should be marked with barricade tape. The boundary size depends on the quantity and hazard potential of the chemical.
- 3.4.2 **Fresh Air Work:** Safe boundaries shall be established, consistent with the potential exposure, surrounding jobs requiring the use of fresh air or SCBA. Questions regarding fresh air barricades should be directed to the Health & Safety Representatives.
- 3.4.3 **Vessel Barricading** (Also see Confined Space HSS-215): When manway covers are being removed, it is the duty of the group performing the task to place red “Danger” barricade tape and a Confined Space Do Not Enter sign over the opening(s) as soon as it is safe to do so. These signs are available from the warehouse.
  - a. The unit operator is responsible for verifying that all openings allowing entry into a vessel are tagged with barricade tape and a Confined Space Sign.
  - b. The barriers can be removed upon issuance of a Confined Space Entry Permit.
  - c. If at any point the vessel is not available for entry, it is the unit operator’s responsibility to verify all openings are again barricaded and the sign replaced.
  - d. The operator can designate the hole watch to install barricade tape if desired.
- 3.4.4 **Benzene:** Boundaries are required around areas where streams containing benzene are being vented or drained. Respiratory protection is required inside these areas. Refer to HSS-409 LAR Benzene Procedure for more information. Contact the Health Group with questions regarding benzene exposure.
- 3.4.5 **Asbestos Abatement:** Approved asbestos barricade tape is posted around asbestos work areas. Refer to HSS-410 LAR Asbestos Procedure for more information.
- 3.4.6 **Lead Abatement:** Approved lead barricade tape is posted around areas involving lead-based paint removal. Refer to HSS-414 Lead Exposure Prevention Program for detailed information.

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**3.4.7 Radiation Sources:** Use barricade tape with suitable signage hung on the tape to identify radiation hazards. Contact the Health Group for more information. Refer to HSS-302 Radiation Protection procedure and the LAR-C Map for detailed information.

- a. Radiography – barricades the area when contractors are utilizing radiation sources for inspection purposes.
- b. Removal of Gauge and Analyzer Sources – if sources are removed from their permanent location in the operating units, barricades should surround the source.

**Electrical:** See Electrical Safety Requirements – RSP-1162.

**3.4.8 Excavations:** Boundaries must be established around all excavations. These barricades must be guardrail systems, fences, or barricades that provide physical protection and are capable of withstanding a force of 200 pounds, (e.g., Scaffolding, K-Rail, Heavy Duty Sawhorses, etc.) positioned at least 2 feet away from the excavation and properly tagged.

**3.4.9 Floor Holes, Open Sided Floors and Platforms:** Must be protected by guardrail systems, fences, or barricades which are capable of withstanding a force of 200 pounds, (e.g., scaffolding, K-Rail, heavy duty sawhorses, etc.) when open. If an existing platform is being modified, creating a hole, or opening, a D14 pre-approval form is required.

**3.4.10 Overhead Work:** Where there is worker exposure below an elevated work area, safeguards must be in place. Overhead work includes, but is not limited to, platforms with grated floors, open sided floors and platforms, ladders, pipe racks, roofs, scaffold erection, steel erection, and suspended personnel platforms. See Appendix B for requirements for minimum barricade sizing for overhead work with the potential for dropped objects.

**3.4.11 Crane Lifts:** safe boundaries shall be posted, using red danger tape, around the area under the load zone.

**3.4.12 Exclusion Zones:** starting up or shutting down operating units requires the exclusion of non-essential personnel. Road barricades and blue exclusion zone tape must be placed on roadways and/or around affected areas to prevent non-essential personnel from entering. See PSM 007 Exclusion Zone for Operating Units During Start up and Shutdown activities for more information on responsibilities.



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- 3.4.13 **Manhole Floor Openings:** shall be guarded by standard covers. While the cover is not in place, the manhole shall be protected by barricading.
- 3.4.14 **Temporary Floor Openings:** shall have barricades. If an existing platform is being modified, creating a hole or opening, a D14 pre-approval form is required

### 3.5 Roadblocks

**Emergency Situations:** Any employee, upon recognizing an emergency condition, is not only authorized, but is expected to immediately block off the area. Once the emergency is under control, the remaining portions of this policy should be followed.

**Planned Activities:** Any employee observing the need for a roadblock should contact their Supervisor and the Refinery Shift Superintendent (RSS). Roadblocks will be set up by the employee recognizing the need or their designee.

**Road Barricading:** Barricades across or next to a roadway will be wooden/plastic barricades or plastic cones. A flag-person may be used in place of barricading to direct traffic away from an area. Flashing amber lights will be required on barricades after dark to alert vehicle traffic of their presence. When barricading roadways be sure to extend the barricades (or indication of such: e.g., signs indicating a “road closure”) to the road’s intersections as to prevent vehicles and equipment from becoming trapped on a road with no outlet.

**Removing Roadblocks:** Roadblocks are to be removed when no longer needed. Roadblocks shall be removed only with the permission of the person in charge of the area involved, or the RSS (501)

#### **Railroad Tracks:**

- a. Specific barricades must be used whenever work is to be Performed on railroad tracks. Blue STOP signs with flashing lights shall be utilized and positioned to assure proper display. These signs are maintained by and available for checkout from the Train & Rack Unit at Carson and from RP&S at Wilmington.
- b. Signs shall be in compliance with Cal-OSHA General Industry Safety Orders (Title 8 CCR 3333)

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**Process Unit and Tank Farm Access:**

- a. Posts or gates restricting access into a tank basin cannot be removed for vehicle entry until a permit to enter is received from operations.
- b. Upon leaving the process units and tank basins, the person requesting the permit must ensure that all barricades to the tank basins are in place and/or closed.

**3.6 Operations  
Barricading of  
Live Units**

- 3.7.1 The purpose for using Live Unit Barricades and Signs is to eliminate any unnecessary traffic, both pedestrian and vehicle, through a particular area of the unit that is still in service or may have hydrocarbon still present in the piping and vessels. Work may still occur in these areas, but it is at the discretion of Operations to determine what work will be allowed. Ops must be notified before any entry is allowed into live units in compliance with HSS-262 – Entering Operating Areas.
- 3.7.2 Setting up Live Unit Barricades.
  - a. Operations will determine the area to be designated as a “LIVE UNIT”
  - b. Operations will barricade off the appropriate area with danger tape and hang “LIVE UNIT” signs.
  - c. Operations are to maintain the integrity of the barricades and signage for the “LIVE UNIT” area.

**3.7 Training**

- 3.8.1 Personnel entering areas barricaded for lead, asbestos, or benzene, must receive training in the hazards and controls associated with such work.

**Appendix A: Terms and Definitions**

**A.1 Barricade**

A device to prevent or limit access to an area where a hazard exists. Barricades include those of permanent design (gates, roadblocks, metal

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protective barriers around manholes), and temporary (i.e., Plastic Tape, Orange Plastic Cones, K-Rail, Heavy duty wooden “sawhorse” type barricades etc.).

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**A.2 Barricade Tag**

A visible tag designed to explain who established the barricade and for what reason. Tags are available at the warehouse. See sample in Appendix C

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**A.3 Controlled Access Zone**

A barricaded area surrounding and clearly identifying the hazard. If the hazard is in the roadway and there at night, it must be visible. At night this can be achieved by the use of flashing lights, reflectors, reflected tape, cones.

The following barricade tape designs are approved for **general** use in the LAR:

- **Red and Black or Red and White stripes (Danger)** tape is used to communicate a dangerous condition. General entry is prohibited unless approval is given from the owner of the task and no hazard exists. Examples include overhead work, scaffold erection, and confined spaces.
- **Yellow and Black (Caution)** tape indicates that employee caution is required to determine hazards in the area. General entry is permitted if there is no immediate danger. It is the responsibility of the employee to determine the possible hazards before entering the area. Examples of hazards include live units, trenching, and tripping hazards.
- **Green and Yellow stripes (Acids or Caustics)** tape is posted when work involves acids or caustics. All personnel in the restricted area must wear protective acid gear, goggle/face shield, gloves, and boots.
- **Yellow and Magenta x-ray (Caution Radiation Area)** tape: The contractor posts this tape along with warning signs during radiation inspections. A flashing red light will also be used to warn all personnel when the source is in use. Do not cross or alter this barricade tape.
- **White (Respiratory Protection)** tape identifies a regulated area determined to have high levels of contaminants. Workers in the regulated area must wear appropriate respiratory protection.
- **Green and Black (Fresh Air Required)** tape identifies areas where a Self-Contained Breathing Apparatus (SCBA) or Supplied Air System is required. General entry is prohibited unless approval is given from the owner of the task and no hazard exists.

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- **Red (Danger Lead Hazard)** tape: Post this tape when lead-based materials are being removed. Qualified personnel entering the regulated area must wear half-mask respirators, Tyvek, and gloves.
- **White (Danger Asbestos)** tape identifies areas containing a potential asbestos hazard, such as exposed insulation or abatement. Qualified workers in the regulated area must wear half-mask respirators with HEPA cartridges and Tyvek.
- **White (Danger Benzene)** tape identifies regulated areas where the exposure limits of benzene are exceeded or potentially exceeded. Half-mask or full-face respirators with organic cartridges are required in the regulated area.
- **Purple (Danger Nitrogen)** tape is posted in areas with potential exposure to nitrogen. Examples include boundaries around areas where nitrogen is being vented to atmosphere or vessels under nitrogen purge. General entry is prohibited unless approval is given from the owner of the task and no hazard exists.
- **Blue (Exclusion Zone)** tape is posted across roadways during unit start up and shut down in order to keep non-essential personnel from entering the area. Hard road barricades are also required. See PSM-007 Exclusion Zone for Operating Units During Start up and Shutdown activities. Entry is prohibited for non-essential personnel.

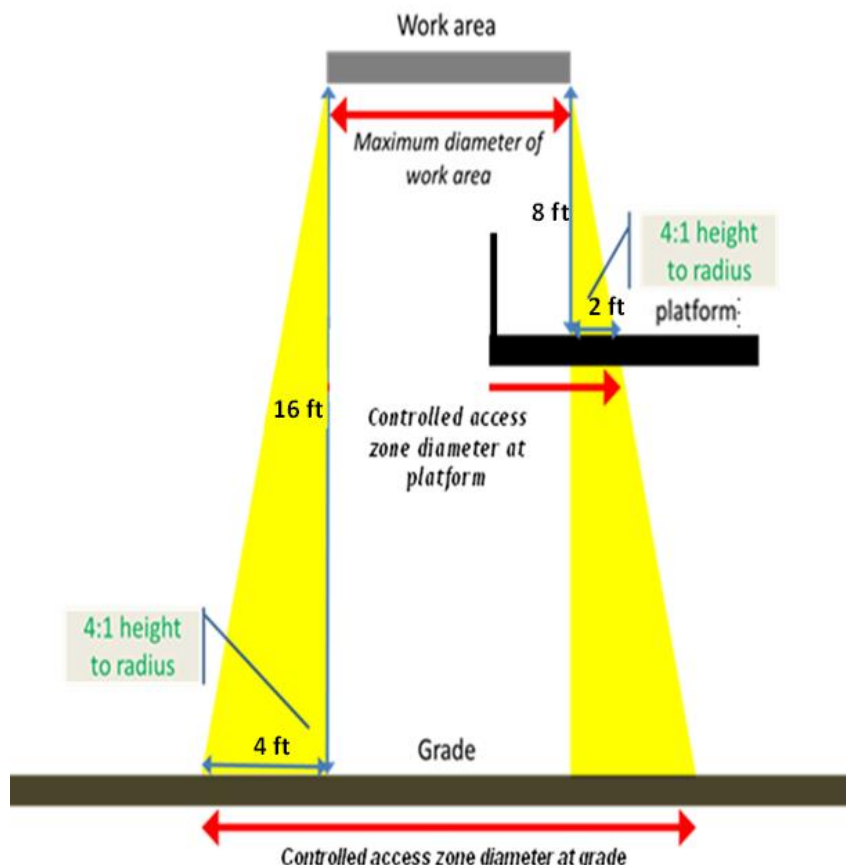
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## Appendix B – Barricade Sizing for Overhead Work

Link: <https://mympc.sharepoint.com/sites/mpc-LAR-DOCMGMT/DMS/LAR-REF-HAS-LAR-000-027-A01.pdf>

The minimum size of a barricaded area (controlled access zone) beneath elevated work sites with a potential for dropped objects is a distance of 1 foot beyond the outside of the overhead work area for every 4 feet of height above grade (or other surface / platform). The risk assessment (JSA/MRA-Permit) must address whether the type of work or its location requires a larger barricaded area.



Examples where a larger barricaded area is required include:

- work above process equipment/piping where a dropped object could bounce out of the minimum barricaded area.
- tasks using materials that could fly/glide out of the minimum barricaded area if dropped (sheet metal, etc.); and
- tasks that could cause objects to be shot or thrown out of the barricaded area (striking wedge in flange with hammer, hydro blasting).

The minimum barricaded area should not be reduced unless the risk of doing so has been reviewed and approved by the Foreman of the Permit Receiver or Permit Issuer (identified on the Permit)

**Note:** In all cases, controls should be identified to prevent objects from being dropped. Examples of such controls include mesh fencing around work areas, netting or temporary platforms below work areas, equipment tethers, parts containers or safe parts-handling method

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## Appendix C: Barricade Tag

Link: <https://mympc.sharepoint.com/sites/mpc-LAR-DOCMGMT/DMS/LAR-REF-HAS-LAR-000-027-A02.pdf>

This is sample of the approved Barricade Tag:

**BARRICADE  
TAPE  
TAG**

Date: \_\_\_\_\_

Company: \_\_\_\_\_

Reason for Tape: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contact Person: \_\_\_\_\_

Radio Channel: \_\_\_\_\_

Telephone No. \_\_\_\_\_

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## Revision History

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**Document Revision History** Complete the following table for each document revision.

Rev. No.	Description of Change	Author	Approved By	Rev. Date	Effective Date
0	Combining of prior site policies.	Connie Lema		April 2021	
1	Updated reference documents. Integrated Carson FS-720 Roadblocks	Johnny Maldonado	Connie Lema	4/10/24	4/10/24

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