

Authored By: Kaitlin Robertson	Blanchard Refining Company LLC Galveston Bay Refinery EQ-9 Barricades	Doc No.: RSW-000052-GB Rev No: 2
Doc Custodian: Safety Supervisor		Refinery Safe Work Procedure
Approved By: Honor Sheard		
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1.0 Purpose

The purpose of this practice is to prevent injury and equipment damage by means of restricting access to hazardous areas and providing visual warnings of such hazards.

2.0 Scope

This practice applies to all work at the MPC Galveston Bay Refinery (GBR) where barricades are needed to protect personnel and property. This procedure establishes requirements for the use and installation of protective and warning barricades by MPC employees and contractor organizations for communications of hazardous/potentially hazardous conditions or for communicating general hazards in areas of concern.

3.0 Procedure

3.1 Roles and Responsibilities

3.1.1 Operations Personnel

Establishes initial barricade boundaries for hazardous leaks or spills, and other operating conditions that are consistent with the hazards presented.

3.1.2 Craft Supervisor or Designee

Establishes safe boundaries for various maintenance or construction tasks in a unit or area including crane lifting and hoisting, welding, chemical handling, etc. Supervisor is required to notify Operations and establish joint approval, when boundaries are established.

3.1.3 All MPC Employees/Contractors

Be knowledgeable of the MPC Barricade procedure; recognize the hazards represented by the various barricade types/colors/signage and erecting the proper barricades for the work and hazards they are creating. Ensure compliance with the procedure. Contractors are required to notify Operations and establish joint approval, when boundaries are established.

3.1.4 Security and Emergency Response Personnel

Control pedestrian and vehicular traffic on roadways during emergency situations that allow safe/efficient egress for non-essential personnel and access for emergency vehicles.

3.2 General Requirements

3.2.1 Barricade Placement

3.2.1.1 Permanent barricades will be constructed of materials suitable to the task such as roadway guardrails, pre-cast concrete, structural steel, or other similar devices.

3.2.1.2 For routine maintenance or construction tasks, barricades shall be erected and tagged prior to the actual beginning of work to avoid leaving an unprotected hazard. Craft supervisor and contractors are required to notify Operations and establish joint approval, when boundaries are established. For construction or maintenance activities causing road closure, see Section 3.2.5. of this procedure for specific requirements.

3.2.1.3 All groups working inside a barricade are responsible for maintaining the barricaded area's orderliness/housekeeping.

3.2.1.4 Scaffold tubing, structural steel, steel plate and/or lumber utilized as a

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barricade, **and** functions as a guardrail or hole cover shall meet the minimum requirements described in the applicable fall protection policy. All temporary/hard barricades must have an access point for entering and exiting the barricaded area.

3.2.1.5 Barricade tape used as a temporary barrier shall be red, yellow or a specialty color according to the nature of the hazard and be maintained between 36 inches and 42 inches high.

3.2.1.6 Barricade tape shall be attached to substantial structures that will adequately maintain the tape in position and not be adversely affected during the work period. Stanchions, large diameter piping and substantial building parts can be utilized for securing barricade tape. Do not tie barricade tape to hot pipes, small diameter conduit, instrument tubing, controlling valves, fire extinguishers, safety showers, fire monitors, etc.

3.2.1.7 Portable/temporary barricade supports shall be used in lieu of unit structures to reduce the barricaded area in order to maintain pedestrian passages during TARs and multiple activity projects. Portable/temporary supports shall be self-supporting and designed to minimize tripping hazards.

3.2.1.8 Barricades must have the work area surrounded on **all** sides. Permanent structures that prevent entry may be used as part of the barricade.

Note: Barricades should be placed at least 6 feet away from the hazard except for High Voltage applications where distances are greater (RSP-1162-000 Electrical Safe Work Practices), PR-38 Hydroblasting and Water Jetting, or when required by a Safe Work Permit and Job Safety Analysis. CAUTION or Warning barricades, when placed around lay-down areas or similar non-hazardous situations, need not be set back 6' but must fully contain the material or condition being barricaded.

3.2.1.9 Completed barricade tags are required on all sides of the barricaded area. The tags must contain information on who established the barricade, for what reason, and date erected. The tags should be legible, clearly visible from all approaches of the barricade. Use of permanent/weatherproof markers to complete the barricade tag is required.

3.2.1.10 An attendant may be used in lieu of a physical barricade for short duration tasks such as moving mobile equipment or swinging a crane load. Any assigned attendants shall be able to readily communicate to others in the work area and are authorized to stop others from entering a hazardous area.

3.2.2 Entering a Barricaded Area

3.2.2.1 Entering a barricaded area shall be avoided unless there is a clear business purpose to do so and it is verified safe to enter.

3.2.2.2 Before entering a barricaded area the entrant shall fully understand the hazards reflected by the barricade by reviewing the barricade tag or attached sign.

3.2.2.3 Areas barricaded for radiation, high voltage, asbestos or inert atmosphere work shall not be entered by anyone other than the authorized persons associated with the barricade.

3.2.2.4 Yellow tape barricades may be entered only after review and understanding of the barricade tag/sign and/or conversation with workers/attendants assigned to the barricaded area and assuring the hazard will not impact the

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safety of the individual entering.

3.2.2.5 Red tape barricade shall not be entered unless the person is assigned to the task within the barricade. Other individuals, not assigned to the task, shall:

- 3.2.2.5.1 Ensure they have thorough understanding of the hazards within the barricaded area,
- 3.2.2.5.2 Obtain verbal permission from the barricade owner/delegate,
- 3.2.2.5.3 Have the proper PPE, and
- 3.2.2.5.4 Assure the hazard will not impact the safety of the individual before entering.

Some situations will FORBID entry into a RED barricaded area. Refer to the table in Attachment B. for barricade situations.

It is imperative that no one crosses RED barricades without express approval by the barricade owner/delegate and proper PPE.

3.2.2.6 Entry into a permanent or temporary/hard barricade shall be made through the access gates provided or designated entry points. Never climb over barricades structures.

3.2.3 Barricades During Darkness

If the plant lighting does not provide suitable illumination to make barricades visible, flashing lights (available through the tool room) will be spaced at intervals to adequately define the hazard.

3.2.4 Barricade Removal/Overnight Approvals

- 3.2.4.1 Barricades and temporary supports will be removed at the end of the work assignment or work shift by the barricade erecting work group unless the hazards associated with the barricade still exist.
- 3.2.4.2 If the barricade needs to remain in place, the work group shall get approval of the assigned Operations team. Night lighting, night work activities and potential vehicular traffic will be minimum considerations.
- 3.2.4.3 If other work groups assume responsibility of the work area and barricade, they shall update the barricade tags and assume overall barricade responsibility.

3.2.5 Roadway Barricades and Closures

- 3.2.5.1 Any operations, maintenance or construction activities that block traffic on a GBR roadway shall be reported to Security at (409) 945-1762 or (409) 945-1765 and by email to [G GBR ESS Road Closures](#) prior to commencement of barricading.
- 3.2.5.2 Traffic barricades utilized for road closures can be a roadway/entrance gate in closed position, highly visible cones, barricade tape, saw horses, emergency vehicles, etc.
- 3.2.5.3 During site emergencies, an attendant may be assigned to barricade a road providing conditions are safe for human occupancy.
- 3.2.5.4 Flashing lights, either on a vehicle or portable, are required on roadway barricades during darkness.

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4.0 Definitions

4.1 **Attendant** – In reference to this procedure, an attendant is a person assigned the sole duty to communicate to others hazard(s) in a specific area by using voice, whistle, flags, flashlight, or other methods. Attendants can be used alone for short duration tasks or to supplement physical barricades /other warning devices.

4.2 **Barricade** – A physical device to prevent or limit access to an area where a hazard exists. Barricades include those of permanent design (gates, roadblocks, metal protective barriers around manholes), and temporary (plastic or polypropylene tape, scaffold tubing, wooden structures (sawhorses), portable flashing lights, and traffic cones/barrels).

4.3 **Barricade Tag** – A visible tag, with white background and black lettering, is required on all temporary barricades designed to explain:

- the date(s) planned for barricade
- the hazards within the barricade
- the Company erecting the barricade and the contact person
- contact person's radio/telephone information

Barricade tags illustrated on Attachment A are an MPC warehouse stock item. Contractors may use an equivalent tag providing the same information.

4.4 **Barricade Tape** – Ribbon or Flagging made from polypropylene or plastic.

4.4.1 The following barricade tape designs are approved for **general** use at GBR.

4.4.1.1 Red and Black (polypropylene fabric) or Red and White "**Danger**" (polyethylene tape) tape is used to communicate an imminent hazard or dangerous condition that can result in death or serious injury. Unauthorized entry is prohibited. Examples include, but are not limited to, IDLH atmospheres, overhead work, scaffold erection, and confined spaces.

4.4.1.2 Yellow and Black barricade tape communicates a condition requiring individual **CAUTION** or awareness. Worker entry is permitted only after review of the barricade tag, understanding of the hazards within the barricaded area and acceptance of the risks described. Examples include, but are not limited to, operating process areas, trenching, and tripping hazards.

4.4.2 **Specific** barricade tape designs are approved for use and may be utilized and observed on the site:

4.4.2.1 White "**Danger Asbestos**" tape identifies areas containing a potential asbestos hazard, such as exposed insulation or abatement activities. Only qualified workers, donned in appropriate PPE, will be allowed to enter this area.

4.4.2.2 Yellow and Magenta "**Caution Radiation Area**" tape: To be posted by qualified inspectors and accompanied by radiation warning signs at specific distances according to the type of radiation activity. Do not cross or alter this barricade tape.

5.0 References

5.1 Occupational Safety and Health Administration, 29 CFR 1910.144, "Safety color code for marking physical hazards"

5.2 Occupational Safety and Health Administration, 29 CFR 1910.335, "Safeguards for personnel

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protection”

5.3 Occupational Safety and Health Administration, 29 CFR 1926.200, “Accident prevention signs and tags”

5.4 Occupational Safety and Health Administration, 29 CFR 1926.202, “Barricades”

6.0 Attachments

6.1 Attachment A: Barricade Tag

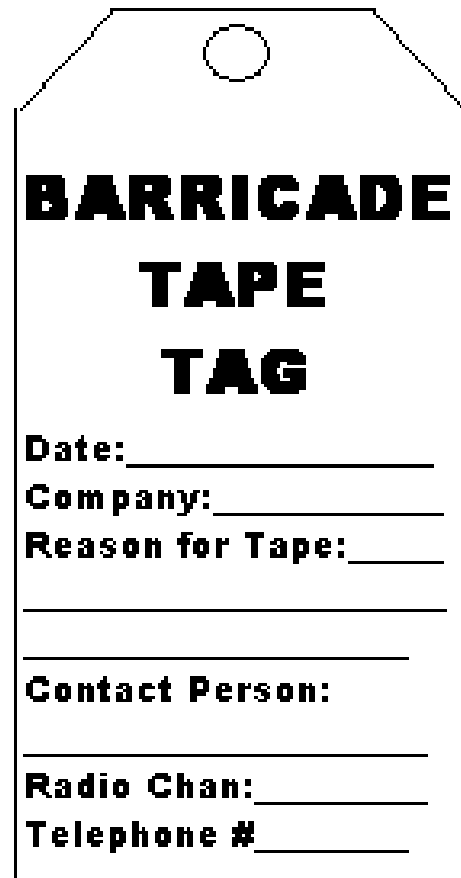
6.2 Attachment B: Conditions Requiring Barricades and/or Signage

7.0 Revision History

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Original Issue. Integrated site procedure and replaces GBR-HESS-PR-09 and RSW-0010-TC General Safety Rules (section 5.14) to reflect current practice.	B. T. Gandee	V. J. Meeks	10/23/2019	12/2/2019
1	Added email address for road closure notifications.	M. K. Alberts	E. R. Kaysen	5/28/2020	5/28/2020
2	Updated barricade tape requirements in Att B for radiation sources to align with SM-1 Radiation Safety Management procedure.	K. Robertson	H. F. Sheard	4/21/2022	5/2/2022

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Attachment A: Barricade Tag



**BARRICADE
TAPE
TAG**

Date: _____

Company: _____

Reason for Tape: _____

Contact Person: _____

Radio Chan: _____

Telephone # _____

(White background with black lettering)

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Attachment B: Conditions Requiring Barricades and/or Signage

The following conditions may require barricades but are not limited to these examples.

No.	Condition	Reference Procedure	Minimum Requirement	Description
1.	Fresh Air Work (including IDLH), Potential Exposures to H ₂ S, N ₂ , HF, or NH ₃	PPE-5 Respiratory Protection PR-17 General Safety Rules , section 3.3.4	Red DO NOT ENTER Barricade Tape and Signs	Safe boundaries ≥ 5 feet radius shall be established, consistent with the exposure, shall surround areas requiring the use of fresh air or SCBA. Signs examples: Danger – Nitrogen in Use, Life Threatening Hazard Present, Oxygen Deficient Atmosphere – BA Required, Authorized and Trained Personnel Only
2.	Inert Atmospheres	PR-5 Inert Confined Space Entry	Red DO NOT ENTER Barricade Tape and Signs	For inert CSE, the restricted area should be hard barricaded when feasible to restrict non-essential personnel from entering. These signs must be posted in the immediate area of the restricted area openings and at every ladder and stairways leading to the restricted areas. The signs should reflect the example provided below: DANGER Danger – Inert Confined Space Restricted Area Potentially Immediately Dangerous to Life & Health Continuous Air Monitoring or Supplied Breathing Air Required Due to Vented Vapors, Areas Immediately Outside Access Opening May Contain Hazardous Vapors Requiring Respiratory Protection

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No.	Condition	Reference Procedure	Minimum Requirement	Description
3.	Benzene	GBR-HESS-PR-21 Benzene Exposure Reduction RSW-0036-TC Benzene Exposure Control Plan	Red DO NOT ENTER Barricade Tape & Sign	To limit access to authorized personnel, the regulated area must be clearly marked with the appropriate warning signs. Where feasible, the area should also be barricaded. Warning signs must read as follows: DANGER BENZENE CANCER HAZARD FLAMMABLE - NO SMOKING AUTHORIZED PERSONNEL ONLY RESPIRATOR REQUIRED
4.	Asbestos Abatement	SM-3 Asbestos Management	Specialty Asbestos Barricade White Tape & Sign	Approved asbestos barricade tape is posted around asbestos work areas. Refer to SM-3 for more information. Contact the site Asbestos Coordinator with questions regarding asbestos. Signage to display: DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AVOID CREATING DUST AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA
5.	Hexavalent Chromium	SM-8 HexChrome Exposure Control	DANGER Tape	Barricade tape and signs must be posted at each work area where employee's exposure to lead is above the PEL. The sign must read: WARNING HEXAVALENT CHROMIUM CANCER HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATOR REQUIRED

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No.	Condition	Reference Procedure	Minimum Requirement	Description
6.	Lead Abatement	SM-2 Lead Exposure Control	Barricade Tape (color dependent on relevant hazards) and Signs	Barricade tape and signs must be posted at each work area where employee's exposure to lead is above the PEL. The sign must read: DANGER LEAD MAY DAMAGE FERTILITY OR THE UNBORN CHILD CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM DO NOT EAT, DRINK OR SMOKE IN THIS AREA
7.	Radiation Sources	SM-1 Radiation Safety Management	Magenta and yellow rope or approved barricade tape, and warning signs posted every ten (10) feet around the outside boundary of the site. The barricade rope and signs shall be visible at a height not exceeding 42 inches	Sources may be brought on site by outside contractors for inspection purposes. Use barricade tape and suitable signage hung on the tape. In event of incident involving a radiation gauge, refer to SM-1 and contact Radiation Safety Officer. Refer to procedures for detailed information.
8.	High Voltage	RSP-1162-000 Electrical Safe Work Practices	Red Barricade Tape	The arc flash boundary shall be barricaded with red WARNING tape.
9.	Excavations	PR-4 Excavation Practice	Barricade Tape (color dependent on relevant hazards)	Excavations must be barricaded to prevent vehicles or personnel from falling into the excavation. Barricades must be located at least six feet from the edge of the excavation. Flasher lanterns should be used in addition to barricades if excavations are left open overnight. A guardrail system may be located at the edge of the excavation and used in lieu of a barricade.

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No.	Condition	Reference Procedure	Minimum Requirement	Description
10.	Roof Work, Walkways, Leading Edges and Open Sided Work Areas	PPE-7 Fall Protection	Red –DO NOT ENTER Barricade Tape	If the fall distance is less than 4 feet, fall protection and the use of an attendant are not required. A hard barricade with signs must be installed prior to grating being removed. Floor holes, open sided floors, and platforms. Place Red barricade tape no closer than six feet (6') from the edge. Place hard guardrails where persons must work or pass closer than six feet (6') to the edge of openings.
11.	Hydro-blasting	PR-38 Hydroblasting and Water Jetting	Red –DO NOT ENTER Barricade Tape	Barricading of the pump(s) and job site hazards is required on every hydroblasting job and should be a minimum of 10 feet to a maximum of 25 feet. All barricades should have four sides and have signage or tags that indicate "Danger Hydroblasting" or similar language to identify that hydroblasting work is being done. See procedure for details.
12.	Overhead Work	PPE-7 Fall Protection EQ-4 Scaffolding	Red DO NOT ENTER or Yellow Barricade Tape and/or Sign (color dependent on relevant hazards)	Where there is worker exposure below an elevated work area, safeguards must be in place. Permanent or temporary barricades are one option. Other methods include screens and canopy barriers. Overhead work includes platforms with grated floors, open sided floors and platforms, ladders, pipe racks, roofs, scaffold erection, steel erection, and suspended personnel platforms. When Building Scaffold over 10 feet in height, red "Danger" tape and tags shall be installed around the work area.
13.	Crane Lifts and Hoisting Areas	EQ-13 Rigging Operations PR-20 Lifting Operations	Red DO NOT ENTER Barricade Tape	The entire swing radius (360 degrees) of the rotating superstructure of the crane shall be barricaded with red tape to prevent personnel from being struck or crushed. Ensuring all necessary barricades are positioned to prevent entry into the rigging operations area
14.	Roadblocks	ME-1 Motor Vehicle and Driving Safety EPR-2 Emergency Action Plan RGD-PS-000014-GB Exclusion Zone for Planned Startup / Shutdown	Assigned personnel and/or various road barriers	Roadblocks are erected and Gate closures are completed for plant emergencies or hazardous conditions. Specific requirements defined in each procedure. Barricades & Signs are available in warehouse.

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No.	Condition	Reference Procedure	Minimum Requirement	Description
15.	Unit Startup and Shutdown	RGD-PS-000014-GB Exclusion Zone for Planned Startup / Shutdown	One orange traffic barrel in each roadway with special signage	Roadways and occupied areas adjacent to process units are evacuated and closed during unit startup and shut down, Specific requirements defined in this procedure. Roadway barrel and signage to display: CAUTION Exclusion Zone Unit Startup/Shutdown Emergency Authorized Personnel Only
16.	Miscellaneous Leaks or spills	none	RED or YELLOW Barricade tape and/or signs	Areas where algae is present, hydrocarbon streams have spilled or hazardous materials have leaked/spilled should be marked with barricade tape. The barricade tape color and the size of the area depend on the hazard potential and quantity of the chemical.
17.	Maintenance or Construction Work in Operating Process Areas	TAR or Project HSSE Plan	Yellow Barricade Tape and Signs	The barricading and signs serve as warning to maintenance/construction workers while performing tasks within an operating process area. Daily tool box talks and/or posting of a DO NOT ENTER sign are normally performed.