Doc Custodian: Safety Professional	**Marathon Petroleum Company LP** **Refining**	Doc No: RSW-0125-GV Rev No: 16
Approved By: Safety Supervisor	**Utility Hose Safety**	**Garyville Refining** **Safe Practice**
Revision Approval Date:12/14/2021	Next Review Date: 12/14/2026	

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1.0 SCOPE

1.1 This procedure covers regular use utility hoses, connected to an engineered utility station (steam, water, air, nitrogen).

1.2 Specialized hoses (i.e. hoses used for welding, hydro-blasting, unit decontamination, and product transfer) are not covered in the Utility Hose Standard Practice. See associated procedures for information and requirements on these hoses.

2.0 GENERAL DESIGN AND INSPECTION

2.1 STANDARDS AND SPECIFICATIONS:

2.1.1 All hoses used in the Refinery must comply with this procedure and the following assembly standards.

2.1.1.1 Hose Safety Institute Handbook Version 1.2 2015.

2.1.1.2 Contitech Engineered Products STAR requirements with U/L verification

2.2 HOSE DESIGN

2.2.1 Hose design and manufacturer's standards must be reviewed by Marathon Petroleum Company's Engineering Department for each application.

2.2.2 The Manufacturer's hose and coupling pressure rating shall be considered by Engineering in selecting or changing a hose unit.

2.3 GENERAL GUIDELINES

2.3.1 The hoses listed in this procedure shall only be used in the service that it is designed for.

2.3.2 These procedures are established for the safety of personnel and equipment and shall not be altered without management approval.

2.3.3 Couplings are never to be interchanged on hoses and field repairs or alterations of hoses is not permitted.

2.3.4 Crossover fittings between hose types are strictly prohibited.

2.3.5 When connecting and disconnecting utility hoses consider the temperature of the material, its pressure, and any chemical hazard that may be present (acid, caustic, flammable, etc.).

2.3.6 Security Whip Checks are to be placed on the ends of ALL hose-connections that have a quick connect or threaded connection, this includes vendor chemical and

bulk loading & unloading hoses. The appropriate sized whip check shall be used with the appropriate sized hose.

2.3.6.1 The two whip checks provided by GHX and available in the LRD Warehouse are Model WB1MOD for ½" – 1¼" diameter hoses.

2.3.7 Safety Vent Ball Valves are to be installed at all Nitrogen and Air hose utility stations. This allows the de-pressuring of stored energy in these hoses after they have been secured and prior to disconnecting the hose.

2.3.8 All air, nitrogen, chemical and water hoses shall utilize crimped fittings.

2.3.9 Laying hoses across walkways should be avoided. When unavoidable, proper signs and/or barricades, and/or highly visible ramps/protective covers warning of a potential tripping hazard, shall be in-place.

2.3.10 Hoses shall not be laid on stairways or through ladder cages.

2.3.11 Only a special-order hose is approved for continuous service. Selection, installation, inspection, testing and replacement of special order hoses are covered by an MOC and shall follow the guidelines outlined in the Rubber and Corrugated Metal Hoses Refining Core Specification SP-50-14.

2.3.12 Hoses not intended and approved for continuous service shall not be used in continuous service (i.e., flow and/or pressure) for more than 30 days under any circumstance. An exception is granted for hoses contained on spools in shop areas (e.g., air hoses on spools in the machine shop).

2.4 INSPECTION/TESTING OF HOSES

2.4.1 All hoses must be inspected by the user before use. Roll the hose out completely and perform the following inspection:

2.4.1.1 Look for cuts, gouges, or worn spots in the hose cover that exposes textile or wire reinforcement.

2.4.1.2 Inspect for soft spots, bulges or blisters in cover, sections of smashed flat hose or kinked areas.

2.4.1.3 Carefully examine the hose where the coupling is attached for any damage such as kinks, soft spots, cover cracks, or permanent deformation of the hose from its original form

2.4.1.4 Check couplings for any slippage which is evidenced by misalignment of the coupling or scored/exposed areas on the hose cover next to the coupling which indicates movement of the coupling.

2.4.1.5 Inspect for hose cover blisters or loose outer cover. This may indicate conveyed product is passing through the carcass of the hose.

2.4.1.6 Look down the inside of the hose couplings for damage or blockage

2.4.1.7 Inspect couplings for any worn parts that may prevent normal function, damage to any safety device that prevents them from working, worn threads, excessive corrosion of rust, cracks in any part of the coupling.

2.4.1.8 Look for changes in cover color. This may indicate chemical attack.

2.4.1.9 Connect the hose to the equipment as per Section 4.0 of this standard. Prior to opening the valve on the equipment side, slowly pressure up the hose to working pressure. Check for leaks, ballooning or other damage.

2.4.1.10 Ensure hose compatibility of service.

2.4.2 Ensure that hose has the appropriate initial inspection tag supplied by the manufacturer prior to use.

2.4.3 Any hoses found to be defective shall be decontaminated, destroyed, and disposed of properly.

3.0 HOSE SPECIFICATIONS

3.1 AIR HOSE – BLACK

3.1.1 Hose 3/4 in. I.D. X 50 ft. Contitech black ORTAC, 300 psig working pressure, with Campbell ULH-3 UNIVERSALOCK couplings and FLSS stainless steel crimp ferrules.

3.1.2 Hose assembly maximum allowable working pressure is **300** psig.

3.1.3 LRD system design operating pressure is **150** psig.

3.1.4 When using air hoses without Campbell Universalock fittings (i.e. Crows Foot), safety clips (Model AG1) shall be used.

3.1.5 When using one air hose equipped with the new Campbell Universalock fitting and one air hose or fitting not equipped with the new Campbell Universalock fitting, safety clips (Model AG1) shall be used.

3.1.6 When both air hoses are equipped with the new Campbell Universalock fittings, the safety clips are not necessary.

3.1.7 Air hose “whip checks” used for pneumatic tools shall meet the requirements

for the black air hose listed above.

3.2 STEAM HOSE – RED

3.2.1 Hose 1" I.D. X 50 ft., 321SS corrugated metal hose, single stainless-steel braid, Hose Master AF4750 with a 1" SS male NPT hex welded one end and a Campbell low profile female swivel nut and high temp seal another end with 1 in female spud. Entire hose to be covered with fiberglass reinforced, silicon cover fire sleeve, Atlantex silicone fire sleeve Pyrotex S/G Industrial or equal stenciled STEAM SERVICE 150 PSI, 550 F MAX

3.2.2 Entire hose to be covered with fiberglass reinforced, silicon cover fire sleeve, Atlantex silicone fire sleeve Pyrotex S/G Industrial or equal stenciled STEAM SERVICE 150 psi, 550 deg. F max.

3.2.3 Hose assembly maximum allowable working pressure is 440 psig @ 550 deg. F.

3.2.4 LRD system design operating pressure is 150 psig up to 550 deg. F.

NOTE: *Steam hose should never be used with 600-pound steam.*

3.3 WATER HOSE – BLUE

3.3.1 Hose 3/4 in. I.D. X 50 ft., Contitech Blue Frontier Hose, 200 psig working pressure, a Campbell BMHB-3 male coupling on one end and Campbell BFHB-3 coupling on the other end. Crimped with a FLSS stainless steel crimp ferrule.

3.3.2 Hose assembly maximum allowable operating pressure is 200 psig.

3.3.3 LRD system design operating pressure is 150 psig.

NITROGEN HOSE – GREEN

3.3.4 Hose 3/4 in. I.D. X 50 ft., Contitech Green ORTAC 300 psig working pressure, a Dixon PHL12WF or Campbell TLH-12N and FLSS stainless steel crimp ferrule.

3.3.5 Hose assembly maximum allowable operating pressure is 300 psig.

3.3.6 LRD system design operating pressure is 300 psig.

3.4 NITROGEN HOSE /ALKY UNIT ONLY – Green with Orange Stripe

3.4.1 Hose 3/4 in. I.D. X 50 ft., Contitech Fabchem 200 psig working pressure, a Dixon F-4PS6-WF, Viton seals each end.

3.5 **DRAIN HOSE - YELLOW**

3.5.1 Hose 3/4 in. I.D. X 50 ft., Contitech Yellow Gorilla 500 psig working pressure, Foster FM6906W female coupling on one end and Foster 71-6 male coupling on the other end. Crimped with a FLSS stainless steel crimp ferrule.

4.0 CONTAMINATED HOSE DECONTAMINATION AND DISPOSAL

4.1 Disposal of contaminated utility hoses will be coordinated by the individual Units with guidance from the MPC Environmental Department.

5.0 CONNECTING A HOSE TO PROCESS EQUIPMENT

5.1 Connecting any hose (including vendor hoses) to live or pressurized process equipment must be:

5.1.1 Covered by a written operating procedure or an MOC ready for start-up.

5.1.2 The Procedure or MOC hazard review must ensure the hose pressures are acceptable and cannot be exceeded by the process pressure.

5.1.3 Process pressure must be verified to be below the utility pressure BEFORE the connection is made.

5.1.4 This excludes connecting a hose to isolated and depressurized equipment. All isolation points must be verified. All hoses connected to isolated and depressurized equipment must be removed prior to re-commissioning.

5.2 Close the process valve before connecting/disconnecting the utility hose.

5.3 A check valve must <u>always</u> be connected between the hose and process equipment at every process connection. This includes connecting hoses to isolated and depressurized equipment. The check valve shall be positioned to prevent the process material from entering the hose (i.e. at the closest point of the process).

5.4 Connection of hoses to live or pressurized process equipment must have a bleeder valve available to de-pressure the hose before disconnecting from the process.

NOTE: *Sight flow indicators with glass components are prohibited from use in Hydrofluoric Acid (HF) Alkylation Units.*

6.0 CONTRACTOR HOSE USE

6.1 Contractors are permitted to utilize their company owned water and air hoses as long as the hose specification and hardware is consistent with MPC's requirements. However, the

utilization of the color green hose is prohibited from water and air usage. All other hoses shall comply with the LRD Hose specifications, hardware and color coding scheme.

6.2 Contractors have the option of either utilizing a tagging system or maintaining on site, written documentation of annual inspection and testing certification for each hose. If a tagging system is not used, each hose must contain an identifying number that corresponds to the inspection and testing records.

7.0 HYDROSTATIC HOSE TESTING AND TAGGING

7.1 All new hoses must be pressure tested and certified by the supplying vendor in accordance with the test pressures specified in section 3.2.

7.2 Hoses will be tagged by the vender with a stainless-steel crimp sleeve that indicate Marathon Petroleum, the test date, maximum allowable operating pressure, and vendor's serial number. A log of hoses, serial numbers, test pressure, and test date is to be kept on file by the vendor. Hoses that are not properly tagged must be returned to the warehouse for return to the vendor.

7.3 Warehouse personnel will be responsible for making sure that all hoses are properly tagged before being issued.

7.4 Upon request, initial test reports are to be provided to Marathon by the supplier. The initial test report shall include the serial number and test results of all hoses, including hoses that have been tagged for removal, with summary of reason rejected.

8.0 REVISION HISTORY

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Change procedural format	Safety	Refinery Management Team (RMT)	10/24/2007	10/24/2007
1	Change to section 4.2 per KMS recommendation R2010084-006	Safety	Refinery Management Team (RMT)	06/09/2010	06/09/2010
2	Reviewed the Standard Practice for accuracy, no revisions required	Safety	Safety	10/18/2010	10/18/2010
3	Revision to test hoses at normal service pressure.	Safety	Refinery Management Team	4/01/2011	4/01/2011
4	Revision to include vendor and transfer hoses	Safety	Refinery Management Team RMT	10/20/2011	10/20/2011
5	Added 3.2.1.6 and revised 3.2.1.5 regarding the use of air hoses with or without Campbell Universalock fittings.	Safety	Safety	1/31/2012	1/31/2012
6	Addition of note to 4.2 prohibiting the use of sight flow indicators in HF Alkylation Units.	Safety	Safety	2/16/2012	2/16/2012
7	Updated section 4.1 - 4.4	Mike Robicheaux	Team Leaders	11/27/2012	11/27/2012
8	Revised sections 4.1-4.4	Safety Department	Safety Department	12/10/2012	12/10/2012
9	Clarified 4.1 and 4.1.1	Safety Department	Refinery Management Team	2/8/2013	2/8/2013
10	Revised Section 4.1. and 4.1.1 per Process Safety Advisory	Safety Department	Safety	8/15/2013	8/15/2013
11	3 Year Review. Updated hose specifications throughout the document along with adding the NOTE under 6.1.2.	Amanda Hall	Safety	2/26/2014	2/26/2014
12	Added 4.2 to close process valve before connecting/disconnecting a utility hose.	Amanda Hall	Safety	3/17/2014	3/17/2014
13	Routine triennial review. No Changes.	Paul Davies	Safety	2/3/2017	2/3/2017

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
14	Changed Standard name to Utility Hose Standard Practice Updated procedure format Removed references to chemical hoses and vender hoses. Added Alky Nitrogen Hose Removed MPC Annual Hose Testing Requirement Added requirement for pre-use inspections, including pressure testing at operating pressure	Doug Senette	Safety	12/13/2018	12/13/2018
15	Updated Contractor Hose Use to include the use of company owned hoses.	Nick Martin	VPP Committee and RLT	4/29/2021	5/1/2021
16	Three year review- no changes	Safety	Safety	12/14/2021	12/14/2021

Appendix 1

Marathon Petroleum Company LP

LOUISIANA REFINING DIVISION

Utility Hose and Fittings

Air Service 150 psi Operating Pressure

Water Service 150 psi Operating Pressure

Nitrogen Service 300 psi Operating Pressure

Drain Service 300 psi Operating Pressure

Steam Service 150 psi 550 deg F Max

HF ALKY UNIT Nitrogen Service 200 psi Operating Pressure

Whip Check to be used on every connection and hose

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For reference only