

Authored By: Mark Garvin	Blanchard Refining Company LLC Galveston Bay Refinery	Doc No.: RSW-000059-GB Rev No: 0
Doc Custodian: EP&R Supervisor		Refinery Safe Work Procedure
Approved By: Von Meeks	EPR-5 Fire Equipment Inspection and Maintenance	
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1.0 Purpose

The purpose of this practice is to define the requirements for the inspection and testing of fire protection equipment used throughout the Refinery. Fire protection equipment covered by this practice includes fire extinguishers, fire monitors, fire hydrants, building fire alarm systems, water spray systems (deluge/sprinkler systems), and foam system(s).

2.0 Scope

This practice applies to the refinery and docks operating areas, laboratory, storage, maintenance, and contractor facilities.

3.0 Procedure

3.1 Roles and Responsibilities

3.1.1 Each Operating Unit/Area

Each operating unit/area is responsible for weekly/monthly inspections of fire extinguishers, monitors and deluge systems as specified in this practice.

3.1.2 Central Maintenance Shop Supervision

Central maintenance shop supervision is responsible for monthly fire extinguisher inspections in central shops.

3.1.3 Building Services/Maintenance

Building Services is responsible for monthly inspection of fire extinguishers and sprinkler systems in office buildings.

3.1.4 Fire Department

The Fire Department is responsible for annual maintenance of fire extinguishers, quarterly and annual inspection of deluge/sprinkler systems, annual inspection of building fire detection/alarm systems, and the inspection of fire department vehicles.

All fire protection repairs resulting from inspections will be entered in SAP and tracked to completion.

3.1.5 Unit Maintenance

Unit maintenance shall track and schedule all repairs through the SAP system.

3.1.6 All Personnel

All personnel are responsible to report damaged fire protection equipment and initiate appropriate repair of fire protection equipment.

3.2 General Requirements

3.2.1 Fire Extinguishers

3.2.1.1 Monthly MPC fire extinguisher inspections are conducted by the operating unit, maintenance shop or building maintenance personnel. These inspections verify the extinguisher is in place, not blocked, adequately identified, not damaged, has intact seals, mounted (where applicable), pressurized (where applicable) and appears ready for emergency use. Records are kept in the Pride system or by a completed checklist.

3.2.1.2 Annually, Fire Dept personnel will perform annual maintenance of MPC fire extinguishers in accordance with fire dept maintenance procedure, FD MP1. An annual maintenance tag is affixed to the extinguisher identifying month

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and year of the last inspection. Records are also maintained by the Fire Dept. While performing annual maintenance, Fire Dept personnel also verify that maintenance and hydrostatic testing requirements are met in accordance with fire department maintenance procedures. Hydrostatic test dates are identified on the extinguishers.

3.2.1.3 Anytime a MPC fire extinguisher is used, damaged, or a seal is missing/broken, the fire department should be called to service or replace the extinguisher.

3.2.1.4 Fire extinguisher location should be visible and/or provided with appropriate marking which include:

3.2.1.4.1 Fire extinguisher signage in office buildings.

3.2.1.4.2 Process units, shops, and warehouses should have signs and/or red painting on walls or columns/angle iron (a minimum of 1 foot wide for 360°) to denote fire extinguisher location.

3.2.1.5 Contractor Fire Extinguishers

3.2.1.5.1 Contract companies will be required to provide fire extinguishers for any hot work activities that they are assigned. They will be required to provide extinguishers for area protection of fab shops or storage warehouses that they house or use.

3.2.1.5.2 Contract companies will perform monthly inspections to assure readiness of extinguishers. Anytime a contractor extinguisher is damaged, discharged, or a seal is missing / broken, the extinguisher will be removed from service and a licensed fire service company will be contacted to make necessary repairs. Records of monthly inspections and documentation of repairs will be maintained by the contract company and made available upon request.

3.2.1.5.3 Contract companies will assure that annual inspections of contractor' extinguishers are performed by a licensed fire service company. Documentation of annual inspections and hydrostatic testing reports will be maintained by the contract company and made available upon request.

3.2.1.5.4 After work is complete, all contract companies are required to remove all fire extinguishers that were provided for all work activities.

3.2.2 Fire Monitors

3.2.2.1 Monthly, operations personnel will inspect and flow fire monitors. These inspections verify the monitor is operational, not blocked, not damaged, and appears ready for emergency use. Nozzle should be left in the full fog position. Records are kept in the Pride system or by a completed checklist.

3.2.2.2 If any repairs are needed, Operations personnel will enter notifications into SAP and track deficiencies to completion.

3.2.2.3 Each operating unit must have a PM to grease elevated monitor fittings annually.

3.2.2.4 Annually, Fire Dept personnel performed annual inspection of fire monitors in accordance with Fire Dept maintenance procedure, FD MP3. Due to water

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quality issues, Bay Plant Fire Dept will flow fire monitors on a semi-annual basis. Records are maintained by the fire department.

3.2.2.5 If any repairs are needed, Fire Dept personnel will enter notifications into SAP and track deficiencies to completion.

3.2.2.6 The Fire Dept will periodically audit the above inspection schedule to ensure inspections are being performed as required.

3.2.3 Fire Hydrants

3.2.3.1 Annually, Fire Dept personnel will perform inspection and maintenance of each fire hydrant in the facility in accordance with fire dept maintenance procedure, FD MP2. Due to water quality issues, Bay Plant will perform a flush semi-annually on all fire hydrants.

3.2.3.2 If any repairs are needed, Fire Dept personnel will enter notifications into SAP and track deficiencies to completion.

3.2.4 Post Indicator Valves

3.2.4.1 Annually, 25% of the East/West Plant fire water system PIVs will be inspected and tested and all the Bay Plant PIVs will be inspected and tested.

3.2.4.2 Power 2 will be responsible for performing these inspections and tests, at the East/West Plant. Fire Dept. is responsible for Bay Plant.

3.2.4.3 If any repairs are needed, Power 2 (East/West Plant) or Fire Dept. (Bay Plant) will enter notifications into SAP and track deficiencies to completion.

3.2.5 Deluge/Sprinkler Systems

3.2.5.1 Monthly, operations personnel will inspect process area systems for supply valve sealed, initiating valves properly positioned, nozzles free of damage/blockage, and valves and associated equipment free of damage and accessible.

3.2.5.2 Monthly, building services (East/West Plant) or Fire Dept (Bay Plant) will inspect that building system valves are sealed/locked in appropriate position, gauges reading normal and not damaged, alarm valve/check valve free of damage, retard chamber/alarm drains not leaking, supervisory switch valves in proper position.

3.2.5.3 Records will be kept in Pride or on written checklists. Written checklists will be forwarded to the Fire Dept.

3.2.5.4 Quarterly, the Fire Dept will make sure that a licensed contractor conducts an inspection.

3.2.5.5 Annually, the Fire Dept will make sure that a licensed contractor performs annual inspection and flow testing.

3.2.5.6 The Fire Dept will enter notifications into SAP and track deficiencies to completion.

3.2.5.7 If any repairs are needed, operating units/Building Services will coordinate work with the Fire Department using licensed fire protection contractors.

3.2.5.8 If any system must be temporarily removed or modified to accommodate maintenance or construction activities, the Fire Dept should be contacted and appropriate contractors will be utilized to ensure system is returned to service upon completion of the work.

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3.2.5.9 The Fire Dept will periodically audit the above inspection schedule to ensure inspections are being performed as required.

3.2.6 Foam System Inspections

3.2.6.1 Semi-Fixed Foam Systems on Tanks

3.2.6.1.1 Annual Inspection - The Fire Dept will conduct an annual visual inspection of semi-fixed foam systems. Caps on foam inlet and outlet connections will be removed and lubricated.

3.2.6.1.2 Annually 25% of the tank foam systems will be flow tested with water to determine piping, foam makers, and foam pourers are free of obstructions.

3.2.6.1.3 Tank Turnaround - During tank TAR, the Fire Dept will conduct a foam discharge test to ensure adequate foam discharge from all foam chambers.

3.2.6.1.4 5-year piping inspection - The Inspection Dept will inspect all foam system piping and foam chambers during the API 653 external inspection. Records will be kept in PCMS.

3.2.6.2 Co-Flexip Foam Systems (Geodesic dome tanks)

3.2.6.2.1 Pre-start-up foam flow test - Prior to placing the system in service, a foam discharge test will be conducted. Foam solution will be supplied to the inlet foam connection and flowed through the distribution manifold onto the roof. Distribution lines will be blinded or disconnected near the seal area. Foam will not flow into seal area. Following the test, the piping and internal hose will be drained by opening the bleeder at the base of the tank.

3.2.6.2.2 Annual test connection foam test - Annually, the Fire Department will coordinate a foam discharge test from the test connection at the base of the tank. The internal hose will be checked for leakage by opening the bleeder at the base of the tank.

3.2.6.2.3 Tank Turnaround - During tank TAR, the Fire Department and Oil Movements will coordinate a foam discharge test through the distribution manifold onto roof. Distribution lines will be blinded or disconnected near the seal area. Foam will not flow into seal area. Bellows at the secondary seal will be inspected for deterioration, weathering, cracking, and tightness of fit.

3.2.6.2.4 10-year piping inspection - The Inspection Dept will inspect all foam system piping and foam chambers during the API 653 external inspection. Records will be kept in PCMS.

3.2.6.3 Large Crude Tank Foam Systems

3.2.6.3.1 6-month inspections - A licensed fire alarm contractor will conduct an inspection of the linear fire detection systems and fire alarm panel.

3.2.6.3.2 Annual Inspections -The Fire Dept will conduct an inspection of the system including water flow through the foam chambers. Foam system will be tested.

3.2.6.3.3 Tank Turnaround - During tank TAR, the Fire Department and

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Oil Movements will conduct a foam discharge test through the foam chambers.

3.2.6.3.4 5-year piping inspection - The Inspection Dept will inspect all foam system piping and foam chambers during the API 653 external inspection. Records will be kept in PCMS.

3.2.6.4 Dock Foam Systems.

3.2.6.4.1 Annual Inspections -The Fire Dept will conduct an inspection of the system including water flow through the foam chambers. Foam system will be tested.

3.2.6.4.2 5-year piping inspection – The Inspection Department will inspect all foam distribution system piping. Records will be kept on PCMS.

3.2.7 Building Fire Alarm Systems

3.2.7.1 Annually, the Fire Dept will see that building fire alarm systems are inspected by a licensed fire alarm contractor. The Fire Dept will enter notifications into SAP and track deficiencies to completion. The operating units/Building Services will make appropriate repairs utilizing a licensed fire alarm contractor.

3.2.7.2 Semi-annually, all releasing panels will be inspected.

3.2.7.3 If any building fire alarm system must be temporarily modified to accommodate maintenance or construction activities, the Fire Dept should be contacted and appropriate contractors will be utilized to ensure system is returned to service upon completion of the work.

3.2.7.4 If a building fire alarm sounds a trouble alarm, the SOC should be contacted. SOC will notify fire dept personnel and security who will investigate and contact the fire alarm contractor if needed.

3.2.8 Emergency Response Vehicles

3.2.8.1 Weekly, the Fire Dept will perform an inspection of all vehicles

3.2.8.2 Monthly, the Fire Dept will perform an in-depth inspection of all emergency response vehicles per fire dept maintenance procedure, FD MP4. The Fire Dept will maintain written records of these checks.

3.2.8.3 At least annually, the Fire Dept will manage preventive maintenance on emergency response vehicles. The Fire Dept will coordinate all repairs and will maintain all maintenance PM and repair records.

3.2.8.4 Annually, the Fire Dept will see that emergency vehicles get the appropriate state or DOT inspections performed.

3.2.8.5 Annually, the Fire Dept will perform or contract a third-party contractor to perform a pump test on mobile fire apparatus pumps. The Fire Dept will maintain a record of these pump tests.

3.2.8.6 Annually the Fire Dept will contract a third-party testing agency to conduct an inspection of the aerial ladder.

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4.0 Definitions

None

5.0 References

None

6.0 Attachments

None

7.0 Revision History

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Original issue. Consolidated site procedures replacing GBR-HESS-EPR-05 to reflect current practice.	M. T. Garvin	V. J. Meeks	12/1/2019	2/13/2020